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The Commonwealth of Massachusetts

Executive Office of Transportation & Construction

EOTC Financial Advisory Assistance

Phase 2: Deliverables and Supporting Materials

June 26, 1992

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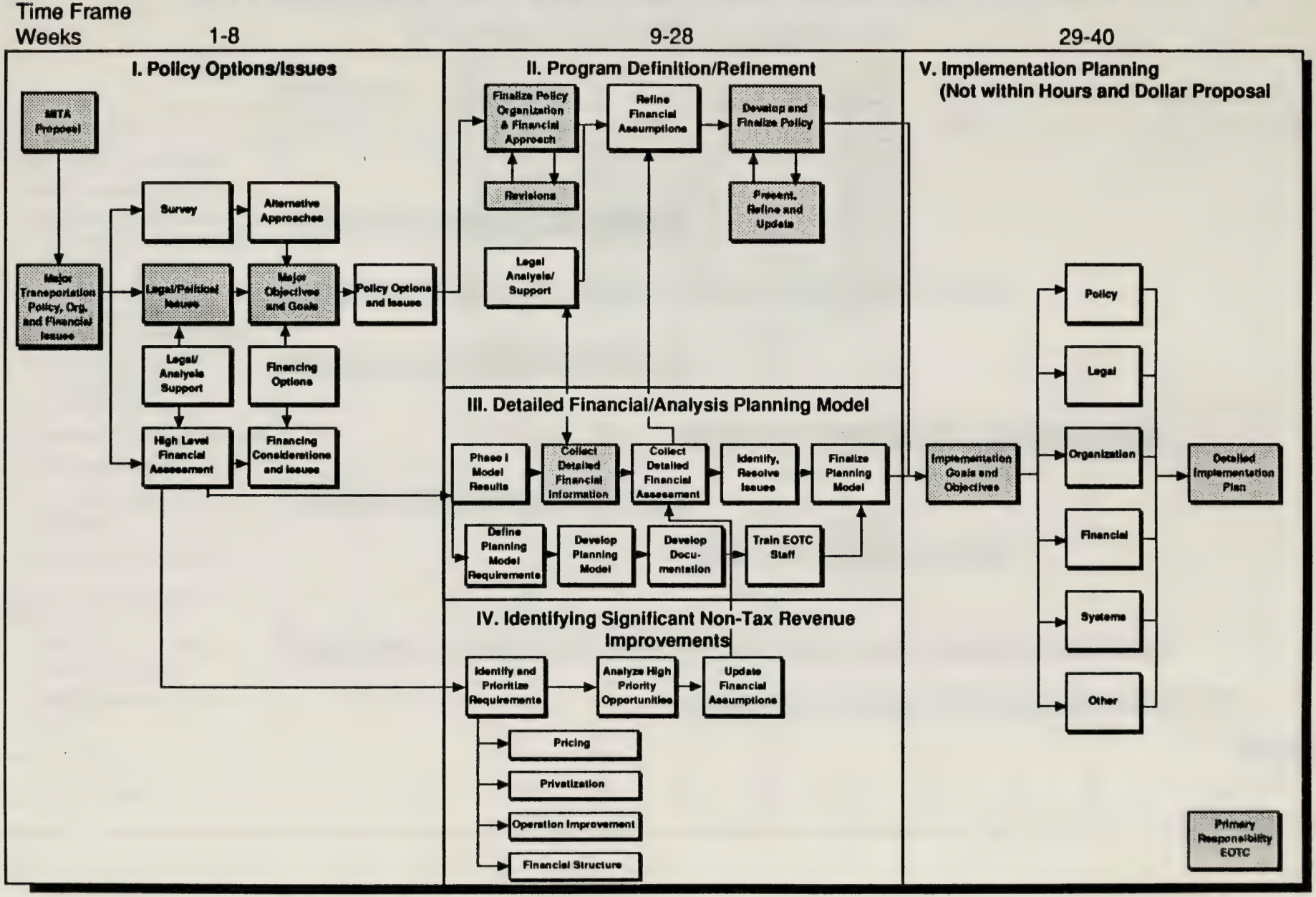
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The information contained in this document is the work product of an on-going engagement of Deloitte & Touche to provide financial advisory assistance to the Commonwealth of Massachusetts, Executive Office of Transportation and Construction (EOTC). It is composed of various presentations, financial analysis, and backup information supporting the overall work effort. Due to the evolving nature of the assignment, this information is subject to misinterpretation without an explicit understanding of the context in which it was developed and presented.

This document, and the information herein, is strictly confidential and was prepared for the express use of the EOTC or parties it designates. If you have any questions regarding this work product, please contact Mr. Doug McCracken or Mr. Reynold Mooney, Deloitte & Touche, at (617) 261-8600.

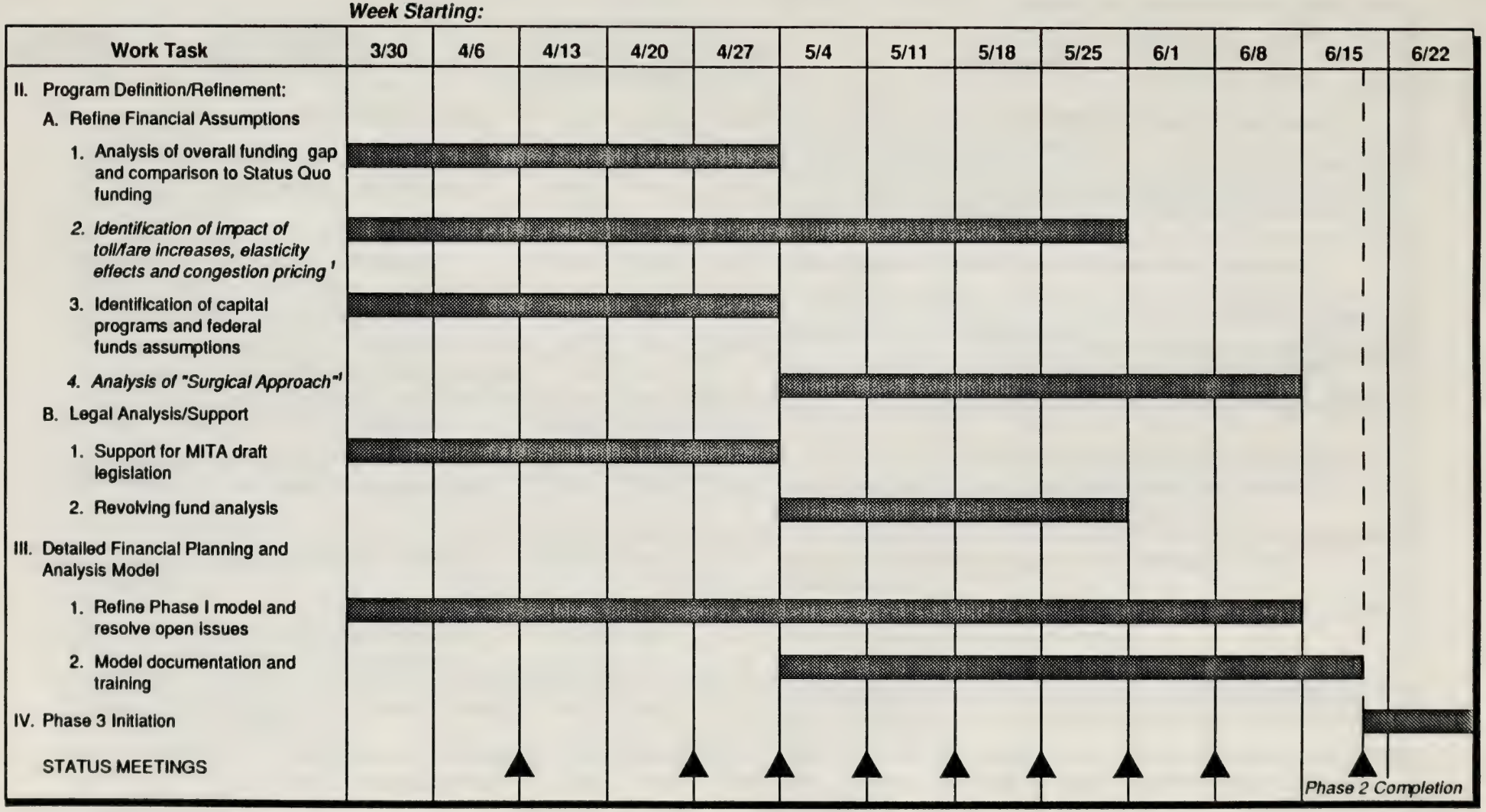
Proposed Project Approach

Contract Scope Phase 2 (Proposal Scope Phases II and III)



2-06-010-65

EOTC Financial Advisory Assistance Project
Phase 2 Work Approach



1. Italics indicate that significant elements of the work task are out of the current contract's scope.



EOTC Financial Advisory Assistance
Phase 2 Workplan

Sub Tasks	Cumu-lative Comp.	% Comp This Phase	Deliver-able	Activity Detail
1.a Identify existing highway capital projects and cash requirements	100%	60%	D.3	Percent complete - Developed detailed view of highway capital program, refined view of turnpike critical needs
1.b Review and evaluate revenue sources for each highway project	100%	65%	D.3	Percent complete - Identified federal funding available and assumed past ISTEA funding. Reviewed structures, impact of congestion pricing and new tolls.
1.c Build cash flow model for highway projects	100%	60%	D.3	Percent complete - Detailed independent assessment and cash flow
1.d Determine highway funding adequacy by project	100%	75%	D.3	Percent complete - Considered MITA debt capacity and amounts available under bond caps of Surgical Approach
1.e Recommend alternative highway funding techniques	100%	75%	D.3	Percent complete - Analyzed alternative turnpike structure and funding approaches
2.a Survey states with similar fiscal issues to Massachusetts	100%	0%	N/A	---
2.b Evaluate other state financing techniques for local applicability	100%	20%	D.2	Percent complete - Input from survey and identification of other state activities regarding congestion pricing and privatization
2.c Recommend appropriate financing methods for implementation	100%	33%	D.8	Percent complete - MITA Proposal, Surgical Approach and other options identified
3.a Review and evaluate capital replacement and expansion requirements of MBTA and RTAs	100%	65%	D.3	Percent complete - Refined Phase I analysis
3.b Review and evaluate sources and uses of operating funds for MBTA and RTAs	100%	65%	D.3	Percent complete - reviewed historical operations at MBTA and RTAs and projected preliminary future scenarios in conjunction with MBTA alternative funding analysis
3.c Quantify amounts and timings of funding shortfalls (MBTA and RTAs)	100%	90%	D.3	Percent complete - High level comparison between funding, debt capacity and cash flow

EOTC Financial Advisory Assistance
Phase 2 Workplan

Sub Tasks	Cumulative Comp.	% Comp. This Phase	Deliverable	Activity Detail
4.a Evaluate current capital budget effectiveness	50%	25%	D.10	Critiqued current capital budgeting process; developed high-level outline of an action plan to design/implement an effective process
4.b Identify current agency roles and organization	0%	0%	N/A	—
5.a Assess authority capital structure, capacity requirements and future plans	0%	0%	N/A	—
5.b Recommend ways to integrate financial information from authorities for EOTC planning and control	0%	10%	N/A	Began to develop process for integrating and managing financial and capital planning information
6.a Develop a system to accurately project cash flow requirements	100%	100%	D.5, D.6	Percent completed - Developed detailed planning model
6.b Develop a model for EOTC tracking of capital spending progress	100%	100%	D.5, D.6	Percent completed - Developed detailed planning model
7.a Examine operations and maintenance cost projections of CA/T	100%	65%	D.3	In progress - Awaiting CA/T details from the project
7.b Analyze funding alternatives for meeting CA/T operating and maintenance requirements	100%	75%	D.4	Percent complete - Identified new CA/T funding "gap" and integrated with MITA, and developed scenarios allocating Non-IC Federal funds
8.a Evaluate privatization proposals	0%	0%	N/A	—

N/A: Not applicable to Phase 2

Deliverables

	Phase	Estimated Hours by Deliverable
1. Survey/Policy Issues and Alternatives	I	200
2. High Level Financial Assessment	I	830
3. Detailed Financial Assessment	III	800
4. Financing Issues and Alternatives	I, II	325
5. Financial Planning and Analysis Model	III	265
6. Financial Planning and Analysis Model Training	III	80
7. Non Tax Revenue Improvement Assessment	IV	1,030
8. Program Definition Support	II	200
9. Implementation and Analytical Support	V	NA
10. Facilitation and Analytical Support – Policy Development – Financial Analysis – Implementation Planning	I, II, III, IV, V	415
		4,145

Deliverables completed and/or initiated during Phase 2

Detailed Financial Assessment

Overview

- This section contains presentations and supporting materials developed in support of an ongoing effort by EOTC to:
  - frame significant transportation funding issues
  - put forward a variety of approaches to resolve the issues
- Our basic conclusions are:
  - The Commonwealth transportation program's demand for money (both operating and capital) is growing significantly faster than funding resources traditionally earmarked for the program
  - Operating and capital cost growth can and should be slowed, through
    - a better focused statewide transportation strategy
    - improved management policies and procedures
  - Increased funding may be required to support the program, depending on the degree of success in controlling costs
- Due to the fluid, evolving nature of the data, assumptions, and policy scenarios underlying the analysis, the material should be viewed in the context of the time frame in which it was prepared and presented
- All policy recommendations contained in these presentations, particularly as they relate to new legislation, capital spending prioritization, and funding allocation, are entirely attributable to the EOTC

Commonwealth of Massachusetts, Executive Office of Transportation and Construction

Transportation Presentation

June 24, 1992

Transportation Presentation

I. Massachusetts Turnpike Analysis

- Enhanced role of the turnpike
- Revenue analysis
- Toll level options
- Detailed assessment of policy scenarios
  - Toll schedule assumptions
  - Capital resources analysis
  - Areas for capital investment
  - Preferred alternative
  - Key elements of legislation

II. Total Transportation Capital Plan

- Capital resources available
- Development of capital spending plan
- Discussion alternative
- Next steps

III. Appendix A

Transportation Presentation

I. Massachusetts Turnpike Analysis

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III. Appendix A

Enhanced Role Of The Turnpike

There are opportunities to make the Turnpike Authority part of the solution to a number of transportation issues.

- Unify tolling system for Tobin Bridge, Tunnels, and Turnpike
  - MTA purchases Tobin Bridge
  - MTA designated operator of Central Artery/Tunnel (project limits)
- Potential exists for MTA to contribute to capital costs of CA/T not currently eligible for Interstate Completion funds
  - High to Causeway and Dewey Square Tunnel
  - Massachusetts Avenue Interchange
  - Leverett Circle
- Potential exists for "toll free" Turnpike west of I-495, as soon as 1994

Turnpike Revenue Analysis

Results of 1991 Operation

- The current toll revenue split is:

	Gross Revenue ($ Millions)	*Total Transactions ($ Millions)*	*Avg. Gross Revenue per Transaction ($ Millions)*
Interchanges 1 to 11 (West of I-495)	$53.6 (43%)	34.3 (26%)	$1.56
Interchanges 11A to 20 (I-495 and East)	70.6 (57%)	95.8 (74%)	0.74
TOTAL	$124.2	130.1 [A]	$0.95

- The western portion of the Turnpike generates revenue out of proportion to its share of total transactions for two basic reasons:
  - the distance of the average trip is longer, and, because tolls are based on distance traveled, average gross revenue per transaction is higher than on the eastern portion of the road
  - transactions on the eastern portion of the Turnpike are magnified because there can be multiple transactions on one trip (example: a vehicle traveling from Weston to I-93 generates transactions at Weston and Cambridge/Allston)

- Approximately 43% of Turnpike toll revenue would be eliminated by removing tolls on interchanges west of I-495. This estimate is based on 1991 toll interchange data reported by the MTA.

Sources: MTA Provided Report on Toll Revenue and Transactions by Interchange

A Transaction split data provided by MTA contrasts with 1991 annual report (total transactions reported to be 128.8 M in the annual report). The difference is caused by non-revenue and group transactions. Based on the annual report transaction data, average gross revenue per transaction is calculated to be $0.97.

Turnpike Revenue Analysis

Results of 1991 Operation

- 1991 Operating Statement:

	$ Millions
Memo: Gross Toll Revenue	$124.2
Toll Revenue (net after volume discounts) [A]	123.4
Other Operating Income	7.3
Investment & Misc. Income	4.0
Total Revenue	$134.7
Operating Expenses	(59.7)
Bond Interest & Redemption Fund (Debt Service)	(29.1)
Repair & Reconstruction Fund (Capital Projects)	(45.0)
Net Revenue [B]	$0.90

Sources: 1991 MTA Annual Report

A Difference between gross and net toll revenue is approximately $0.8 million of volume discounts

B MTA uses a fund accounting methodology as prescribed in the Trust and Supplemental Trust agreements and, as such, does not calculate a "Net Revenue" as shown here. Instead, funds are distributed among or drawn from various funds, including $3.0 million to restricted revenues, and a reduction of ($2.1) million in the revenue fund. This "nets" to a $0.9 million net revenue calculation.

2-06-035-25

Turnpike Revenue Analysis

- The base operations of the Turnpike, as shown in the 1991 financials analysis, do not generate a level of surplus necessary to accomplish the objectives of:

  - a unified toll structure
  - supporting CA/T and Tobin Bridge operating & maintenance costs
  - contributing to CA/T capital costs
  - removing Turnpike tolls from interchanges west of I-495

- To accomplish the objectives identified, toll increase options over the ten year period should be considered

Tolling Options

- The impact of increasing tolls on traffic is difficult to predict. Changes in traffic volume depend on secondary routes available and other factors.

- A reasonable base elasticity assumption is that an 8% decline in traffic occurs for every 100% increase in tolls. This assumption has been used by DeLeuw, Cather and Lazard Freres and its reasonableness has been verified with a Wilbur Smith Associates traffic and tolling expert.

- For toll increases greater than three times over ten years, traffic impacts can be different and difficult to predict (NJ Turnpike experience). Boston toll levels, however, are low relative to other Northeast regions (e.g., Tobin Bridge at $0.50 versus George Washington Bridge at $4.00) and this may impact how travelers react to Boston area increases.

- Tolling options considered are:

  1. ***Status Quo*** (Tobin Bridge, Tunnel, and Turnpike tolls remain at existing levels)
     - not realistic, given capital needs and objective to remove western Turnpike tolls
     - toll structure would remain low relative to other regions in Northeast
     - public expectations unclear
  2. ***Lazard Freres Report toll increases*** (toll schedule assumptions attached)
     - previous administration's report, issued November 1990
     - identified need to increase tolls to cover Central Artery operations & maintenance costs
     - public awareness or acceptance of the report limited
     - did not contemplate removing Turnpike western tolls or contributing to CA/T capital costs
  3. ***Three Times toll increases*** (toll schedule assumptions attached)
     - maximum realistic increase over the period, based on opinion of traffic and tolling expert at Wilbur Smith Associates
     - public reaction may be the same regardless of which increased toll option is chosen

Toll Schedule Assumptions

Western Tolls Removed in 1994

		State Fiscal Year								
	Today	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Turnpike (nominal average toll)[A]											
• Lazard Freres Increase	$1.35	$1.50	$1.20[B]	$1.30	$1.30	$1.30	$1.30	$1.30	$1.55	$1.55	$1.55
• "Three Times" Increase	$1.35	$1.75	$1.40[B]	$2.15	$2.15	$2.15	$2.75	$2.75	$3.10	$3.10	$3.10
			Tolls west of I-495 removed								
Tunnels and Bridge											
Third Harbor Tunnel[C]	NA	NA	$1.30	$1.70	$1.70	$1.70	$2.70	$2.70	$2.80	$2.80	$2.80
Callahan - Sumner Tunnels[C]	$1.00	$1.30	$1.30	$1.70	$1.70	$1.70	$2.70	$2.70	$2.80	$2.80	$2.80
Tobin Bridge[D]	$0.50	$1.30	$1.30	$1.70	$1.70	$1.70	$2.70	$2.70	$2.80	$2.80	$2.80

[A] Turnpike toll is single trip average and is collected in each direction. Bridge and tunnel tolls are one way tolls and are collected in only one direction of travel.

[B] Since Turnpike becomes free west of I-495 in 1994, actual distance tolled declines and, therefore, average nominal toll declines. Increases shown, however, represent Lazard increase or Three Times increase consistent with today's average toll from I-495 and east.

[C] Tunnel tolls from Lazard Freres increase schedule.

[D] Tobin Bridge not included in Lazard Freres report, but toll schedule is assumed to be consistent with that of the tunnels.

2-06-035-04

Capital Resources Analysis

Cumulative Amounts (1993-2002), $ Billions	Toll Scenario - Tolls Removed West of I-495	
	Lazard Increase	Three Times Increase
Total Income [A]	1.85	2.33
Operating & Maintenance Expense [B]	(1.15)	(1.15)
Debt Service on Existing Debt (Assuming Refunding)	(0.20)	(0.20)
Net Cash After Existing Expenses	0.50	0.98
Potential New Debt Capacity	0.15	0.48
Cash Surplus Available	0.39	0.62
Total Resources Available to Support Capital Program (Before reinvestment in Turnpike infrastructure)	**0.54**	**1.10**

[A] Includes Turnpike, Callahan - Sumner Tunnel, Third Harbor Tunnel and Tobin Bridge revenues. Revenues include toll, other operating, investment and miscellaneous income. Scenarios assume Turnpike west of I-495 becomes a free road in 1994 with commensurate decline in revenues.

[B] Includes operating and maintenance costs for Turnpike, Callahan-Sumner Tunnels, Tobin Bridge and Third Harbor Tunnel and Central Artery (consistent with Lazard Freres timing and O&M assumptions).

Areas For Capital Investment

($ Billions)

Potential Investment Need	Cost	MTA Resources	
		Lazard Freres	Three times
Tobin Bridge Purchase From Mass Port	$0.04 [A]		
Turnpike Infrastructure Re-investment	0.56 [B]		
CA/T Capital Projects (not eligible for Interstate Completion funds):			
– High to Causeway & Dewey Square	1.32 [C]		
– Mass. Ave. Interchange	0.25 [C]		
– Leverett Circle	0.04 [C]		
Total	**$2.21**	**0.54**	**1.10**

- Given the total need for capital investment being contemplated for the Turnpike, the Three Times increase option is financially more feasible

[A] Tobin Bridge purchase price estimated at 7 times revenue, or $38.5 million (from MassPort 1991 annual report Tobin Bridge revenue data). Supplemental Trust specifies that purchase price will be greater of seven times revenue or independent appraised value based on highest, best use.

[B] Estimate based on inflated $600 million requirement identified in MTA "Critical Needs for the '90's" Study and not $1.1 billion cited as justification for new bond issue. Analysis assumes that 26% of this need is attributable to Turnpike west of I-495 and will be absorbed by MHD when tolls are removed. Incremental federal funds availability has been investigated and is expected to be minimal.

[C] Estimates based on adjusted 1989 ICE cost projection developed by CA/T.

2-06-035-29

Preferred Alternative

($ Billions)

Potential Investment Need	Cost	CAPITAL RESOURCES		Unmet Need
		MTA (Three Times Toll Increases)	Non- Interstate Completion (Federal)	
Tobin Bridge Purchase From Mass Port	$0.04 [A]	$0.04	-	-
Turnpike Infrastructure Re-investment	0.56 [B]	0.34	-	0.22
CA/T Capital Projects (not eligible for Interstate Completion funds):				
– High to Causeway & Dewey Square	1.32 [C]	0.66	0.66	-
– Mass. Ave. Interchange	0.25 [C]	0.05 [D]	0.20	-
– Leverett Circle	0.04 [C]	0.01 [D]	0.03	-
Total	**$2.21**	**$1.10**	**$0.89**	**$0.22**

With Three Times toll increases and application of Non-Interstate Completion Federal funds to the CA/T projects listed above, the following results can be achieved:

- Tobin Bridge purchased by MTA and brought into unified tolling system
- Turnpike Infrastructure Reinvestment provided for at reduced levels
- CA/T capital projects listed above funded partially with toll revenue, with following consequences
  - Federal Non-IC funds originally programmed for the projects can be used in other areas of the statewide transportation capital program ($1.44 billion, or 62%, of ISTEA Non-IC funds remain available for use)
  - Federal Toll Road Reimbursement funds ($160 million) are included in the Non-IC funding package for CA/T projects above
  - state's contribution for match of Federal funds reduced to zero for CA/T projects identified above

[A] Tobin Bridge purchase price estimated at 7 times revenue, or $38.5 million (from MassPort 1991 annual report Tobin Bridge revenue data). Supplemental Trust specifies that purchase price will be greater of seven times revenue or independent appraised value based on highest, best use.

[B] Estimate based on inflated $600 million requirement identified in MTA "Critical Needs for the '90's" Study and not $1.1 billion cited as justification for new bond issue. Analysis assumes that 26% of this need is attributable to Turnpike west of I-495 and will be absorbed by MHD when tolls are removed. Incremental federal funds availability has been investigated and is expected to be minimal.

[C] Estimates based on adjusted 1989 ICE cost projection developed by CA/T.

[D] Assumes 20% local match of federal funding is minimum required.

2-06-035-03a

Key Elements of Proposed Legislation

- Massachusetts Turnpike Authority (MTA) role enhanced:
  - responsible for contribution of excess capital resources to construction costs of appropriate portions of the project (those that are not eligible for Interstate Completion funds)
  - responsible for operation and maintenance of Central Artery/Tunnel
- MTA to purchase Tobin Bridge from MassPort ($15 million of sale proceeds to go to Chelsea)
- MassPort to fund certain highway and transit capital projects (including Airport Station and Route 1A interchange), the purposes of which are to improve surface access to Logan Airport
- Future MTA bond issuance subject to prior approval
- MTA Board increased to 5 members
- Centralized determination of priorities for capital spending and funding allocation

KEY ISSUE: Need to develop a strategy relating to public perception of the initiative.

Transportation Presentation

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III. Appendix A

Known And Projected Resources -- Transportation Capital Analysis

(Cumulative, 1993 to 2002 - $ Billions)

FEDERAL SOURCES:			
Available from ISTEA: [A]			
– Interstate Completion (dedicated to CA/T)		$2.21	
– Dedicated transit		0.68	
– Non-Interstate Completion:			
-- Flexible	1.28		
-- Not flexible	1.05		
-- Total Non-Interstate completion		2.33	
TOTAL AVAILABLE FROM ISTEA:			$5.22
Projected Available From Post-ISTEA Act: [B]			
– Interstate Completion (dedicated to CA/T)		0.86	
– Dedicated transit		0.28	
– Non-Interstate Completion:			
-- Flexible	1.12		
-- Not flexible	0.55		
-- Total Non-Interstate Completion		1.67	
TOTAL AVAILABLE FROM POST- ISTEA ACT:			2.81
Remaining Pre-ISTEA Act Funds:			
– Interstate Completion (dedicated to CA/T)		0.34	
– Dedicated transit		0.20	
– Non-Interstate Completion		0.15	
– Restored obligation authority [C]		0.15	
TOTAL AVAILABLE FROM PRE- ISTEA ACT:			0.84
TOTAL FEDERAL FUNDS AVAILABLE			$8.87
STATE SOURCES: [D]			
Transit (MBTA Board imposed spending cap)		3.00	
A&F cap for highway		3.90	
TOTAL STATE FUNDS AVAILABLE			$6.90
MASSPORT CONTRIBUTION (1A interchange, Airport station mod.)			$0.10
MTA CONTRIBUTION (Preferred Alternative, CA/T capital contribution only) [E]			$0.72
TOTAL FUNDS AVAILABLE			$16.59

[A] Analysis assumes appropriation level at 90% of Act authorization, consistent with historical appropriations levels.

[B] Projected post-ISTEA funding assumes that remaining IC portions of CA/T will receive 90% federal match and that non-IC funds remained level by year (planning horizon shown captures 5 years, compared to 6 years for ISTEA). Transit funds are based on actual cash flow estimates for actual projects (e.g., Old Colony, South Boston Transitway, etc.)

[C] Restored obligation authority estimated at 30% of funds which are appropriated, but which have lapsed obligation authority.

[D] State resources available assumes a straight line projection of current spending and bond caps.

[E] Because Tobin Bridge purchase and Infrastructure Reinvestment are not included as part of the state transportation capital analysis, MTA contributions in these categories are not included.

Uses Of Funds -- Transportation Capital Analysis

(Cumulative, 1993 to 2002 - $ Billions)

Total Funds Available		$16.59
Spending required to meet:		
– Existing contractual commitments	$(0.52)	
– Clean air requirements (projects in SIP, see project detail, Appendix A)	(2.62)	
– Accessibility requirements (ADA, see project detail, Appendix A)	(0.52)	
Spending required for completion of Central Artery/Tunnel	(6.60) [A]	
Total required for existing commitments, SIP, ADA and Central Artery/Tunnel		(10.26)
Resources remaining		6.33
Additional capital funding decisions:		
– MBTA infrastructure reinvestment at 100% current level	(2.80)	
– Highway infrastructure reinvestment at 100% current level [B]	(4.00)	
– Highway expansion projects (see project detail, Appendix A)	(1.41)	
– Other defined rail and transit projects (see project detail, Appendix A)	(0.89)	
– Chapter 90 cities and towns (100%) [C]	(1.10)	
– PWED (100%) [D]	(0.20)	
– RTA, MAC and Rail capital projects (100%) [E]	(0.30)	
Total potential additional capital spending		(10.70)
Surplus/(deficit) funds available		$(4.37)

[A] Estimate based on inflated project cash flow, not on contract obligation schedule. The Non-IC eligible portions of the project will be funded as described in MTA Preferred Alternative.

[B] Based on current advertising program of $400 million annually. Specific projects have not been identified.

[C] Based on current spending of $90 million annually, inflated.

[D] Projected $20 million annual based consistent with historical program levels.

[E] Based on $30 million annual estimate by EOTC.

2-06-035-14

Uses Of Funds -- Discussion Alternative

(Cumulative, 1993 to 2002 - $ Billions)

Total Funds Available		$16.59
Spending required to meet:		
– Existing contractual commitments	$(0.52)	
– Clean air requirements (projects in SIP, see project detail, Appendix A)	(2.62)	
– Accessibility requirements (ADA, see project detail, Appendix A)	(0.52)	
Spending required for completion of Central Artery/Tunnel	(6.60) [A]	
Total required for existing commitments, SIP, ADA and Central Artery/Tunnel		(10.26)
Resources remaining		6.33
Additional capital funding decisions:		
– MBTA infrastructure reinvestment at 75% current level	(2.10)	
– Highway infrastructure reinvestment at 75% current level [B]	(3.00)	
– Highway expansion projects	(38% current level) [C]	(0.88)
– Other defined rail and transit projects		
– Chapter 90 cities and towns (11%) [D]	(0.12)	
– PWED (0%)	0	
– RTA, MAC and Rail capital projects at 75% current level [E]	(0.23)	
Total potential additional capital spending		(6.33)
Surplus/(deficit) funds available		$0.00

[A] Estimate based on inflated project cash flow, not on contract obligation schedule. The Non-IC eligible portions of the project will be funded as described in MTA Preferred Alternative.

[B] Reduced funding level allows for advertising program of $300 million annually.

[C] Allocation of funding to specific projects in these categories to be at the discretion of EOTC.

[D] $120 million is already allocated to Chapter 90 from current bond funds.

[E] Based on $30 million annual estimate by EOTC.

2-06-035-15

Potential Options For Relieving Capital Spending Pressure

- Federal legislative relief from Clean Air Act timeline and milestone requirements
- Secure incremental federal funds to reduce MHD operating and maintenance expense for free portion of Turnpike (initial analysis indicates incremental Federal funding would be approximately $5 million per year)
- Discretionary funds available under ISTEA (initial analysis indicates that the total amount of ISTEA discretionary funds available nationally is approximately $1 billion)
- Utilize special obligation bond authority separate from spending cap restrictions, or some other dedication of funds for special use
- Participate in ISTEA revolving loan program to create ongoing source of funds for capital projects
- Congressional or administrative relief on obligation authority for previously authorized but not obligated Interstate Completion funds
- Incorporate "pay as you go" financing as part of the transportation capital program funding structure

Next Steps

- Finalize bill and consider timing for bill filing
- Develop strategy relating to public perception of initiative
- Finalize policy, tolling levels and develop tactical implementation plans
- Review capital planning "Discussion Alternative":
  - Policy -- what programs and projects should be included
  - Implementation planning:
    -- given spending objectives, develop departmental plans for how to operationalize
    -- develop tactics to ensure timing of funds availability matches timing of obligation and spend out

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II. Total Transportation Capital Plan

- Capital resources available
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III. Appendix A

2-06-035-23c

Spending Required For Existing Contracts, SIP and ADA

(Cumulative, 1993 to 2002 - $ Billions)

EXISTING CONTRACTUAL COMMITMENTS [A]		$0.52
CLEAN AIR PROJECTS (State Implementation Plan Commitments)		
• Old Colony Restoration	$0.62	
• Blue Line Station Expansion and Refurbishment (Interim Segment)	0.41	
• South Boston Transitway (Interim Segment)	0.39	
• South Boston Transitway (Completion) [B]	0.12	
• Blue to Red Line Connector at Charles (Phase 1)	0.06	
• Parking Spaces Expansion (Structures - 20,000 new spaces)	0.28	
• Lechmere Station Relocation	0.06	
• Washington Street Replacement (Phase 1)	0.05	
• Orange Line Fleet Expansion	0.13	
• Red Line Fleet Expansion	0.12	
• Bus Procurement	0.11	
• South Station Bus Terminal/Track 12	0.11	
• Worcester Commuter Rail Extension	0.09	
• Newburyport Restoration	0.05	
• Arborway Restoration	0.01	
• Commuter Boat Terminals	0.01	
SUB-TOTAL CLEAN AIR		$2.62
ACCESSIBILITY PROJECTS (ADA, etc.)		
• ADA Key Station Plan	$0.13	
• Green Line Low Floor Vehicle Procurement	0.38	
• State Accessibility (AAB) Compliance	0.01	
SUB-TOTAL ACCESSIBILITY		$0.52
TOTAL		$3.66

[A] Contractual commitments means projects underway where contracts are in place or where bid evaluation and award has occurred.

[B] $120 million does not represent the total cost of this project. Because completion date of the South Boston Transitway (Completion) project is 2005, a portion of the project cost falls outside of the ten year time frame.

2-06-035-12

Capital Spending Projects - Highway Expansion
(Cumulative, 1993 to 2002 - $ Millions)

Classification	Name/Location	Total Cost
Major Expansion	Salem - Beverly Bridge	78.1
New Bridge	Westfield River Bridge	15.0
Demonstration	Lawrence	13.0
Demonstration	East Milton Decks	14.3
Drainage Improvement	Route 9, Wellesley	13.8
Drainage Improvement	Hobbs Brook	69.8
New Capacity	I-95/Route 128, Canton	4.6
New Capacity	Route 1146, Worcester - Milbury	190.1
New Capacity	Crosby Drive/Middlesex Turnpike, Bedford	19.3
New Capacity	I-93/WIP Interchange, Woburn	15.7
New Capacity	Route 57 West, Agawam	27.2
New Capacity	Route 44, Raynham - Middleborough	56.8
New Capacity	Route 1, I-95 to I-495	25.5
New Capacity	River Road, Andover/Lawrence	7.2
New Capacity	Route 6 Cape Double Barrel	158.4
New Capacity	I-495/Marlborough Interchange	15.0
New Capacity	Route 2, Fitchburg/Leominster	22.0
New Capacity	Route 140, Mansfield	4.2
New Capacity	Route 44/Samoset Street, Plymouth	5.8
New Capacity	Route 44, Plymouth	136.8
New Capacity	Boardman Street, East Boston	14.7
New Capacity	Merrill Road, Pittsfield	16.4
New Capacity	Center and Seymour Streets, Pittsfield	6.1
New Capacity	Route 128, Randolph/Wellesley	104.8
New Capacity	Route 3 South	73.5
New Capacity	Route 3 North	167.8
Noise Barriers	Type II, Milton/Quincy	7.1
Relocation	Upper North Street, Pittsfield	13.5
Relocation	Route 140, Franklin	20.0
Revised Interchange	Route 1/Route 114 Interchange, Peabody	14.6
Revised Interchange	Route 1/I-95 Interchange, Sharon	16.2
Revised Interchange	I-93/Route 125, Wilmington	6.8
Revised Interchange	Route 24/Route 140 Interchange, Taunton	2.8
Revised Interchange	I-93/Route 129 Interchange, Wilmington	13.9
Safety Improvement	Route 2, Concord	16.2
Safety Improvement	Lexington Marrett Road	2.2
Safety Improvement	Route 2 Truck Escape Ramps	1.8
Safety Improvement	Route 139, Marshfield	4.4
Safety Improvement	Coltsville Intersection, Pittsfield	2.9
Safety Improvement	Routes 7 & 20, Pittsfield	5.6
Safety Improvement	Shawinigan Drive, Chicopee	6.0
TOTAL		1410.0

Other Defined Rail And Transit Projects

(Cumulative, 1993 to 2002 - $ Billions)

North Station Transportation Center	$0.27
Central Materials Warehouse	0.01
South Boston Power Plant	Minimal [A]
Mini-Station Modernization Program	0.01
Commuter Rail Extensions:	
New Bedford/Fall River	$0.33
Foxboro	0.01
Saxonville	0.03
Milford/Bellingham	0.03
Arborway Maintenance Facility	0.12
Blue Line Fleet Expansion (28 Cars)	0.08
TOTAL	$0.89

[A] Total project cost is $4 million.

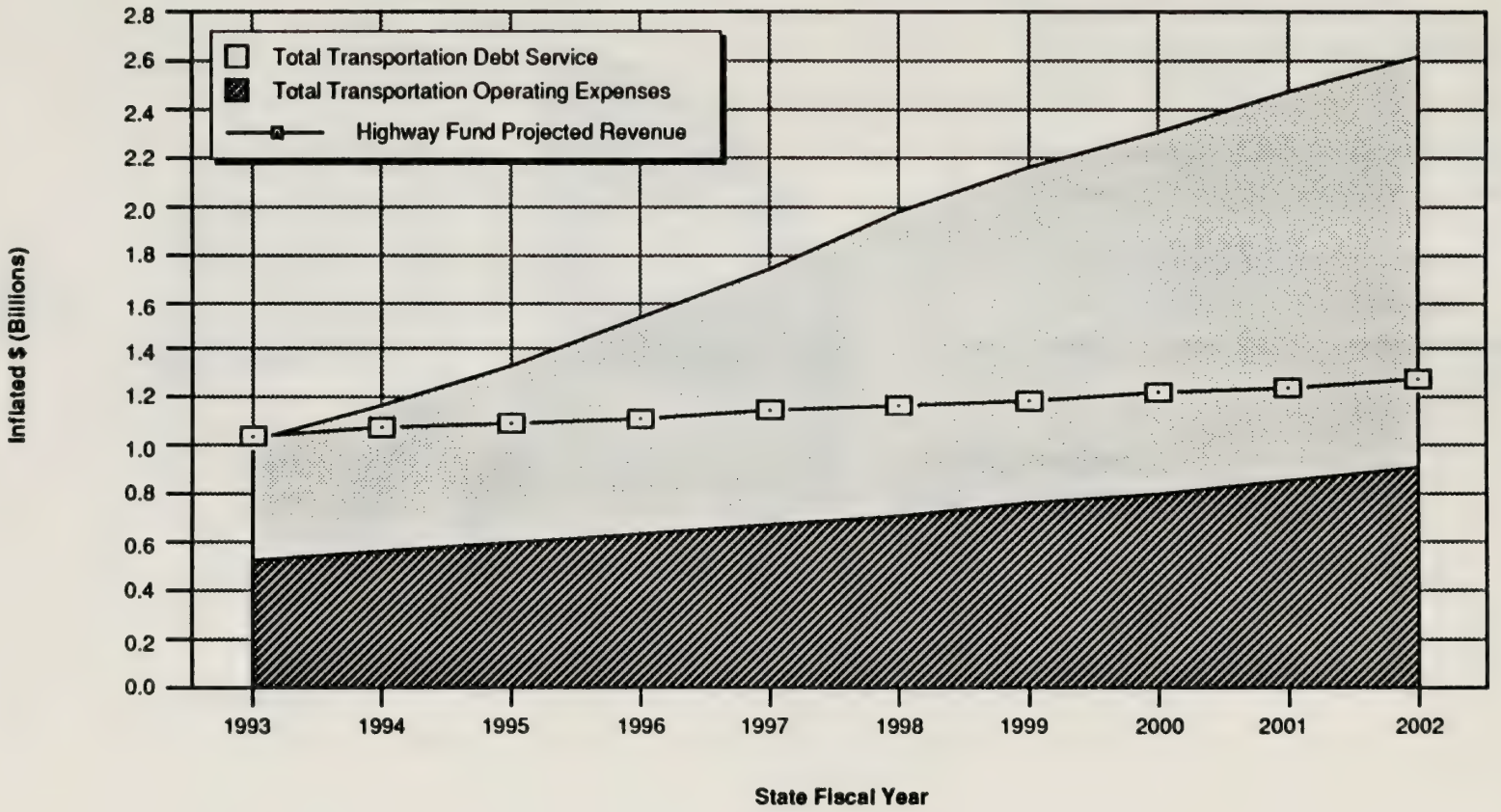
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Commonwealth of Massachusetts, Executive Office of Transportation and Construction

Commonwealth Transportation Funding Issues

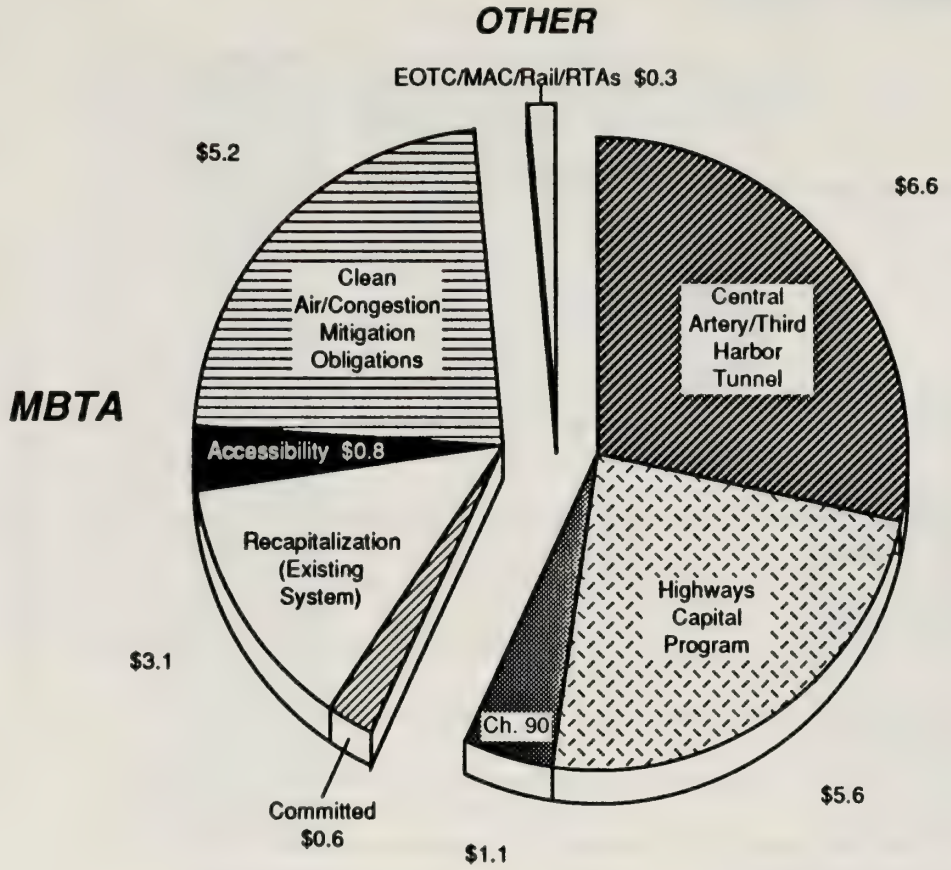
April 27, 1992

The Highway Fund is not sufficient to finance transportation costs past Fiscal 1993, assuming that no restructuring takes place and the capital spending agenda is pursued



Note: The Highway Fund consists primarily of the motor vehicle fuel tax and registry fees. The revenue projection presented here assumes no increases in the gas tax or registry fees.

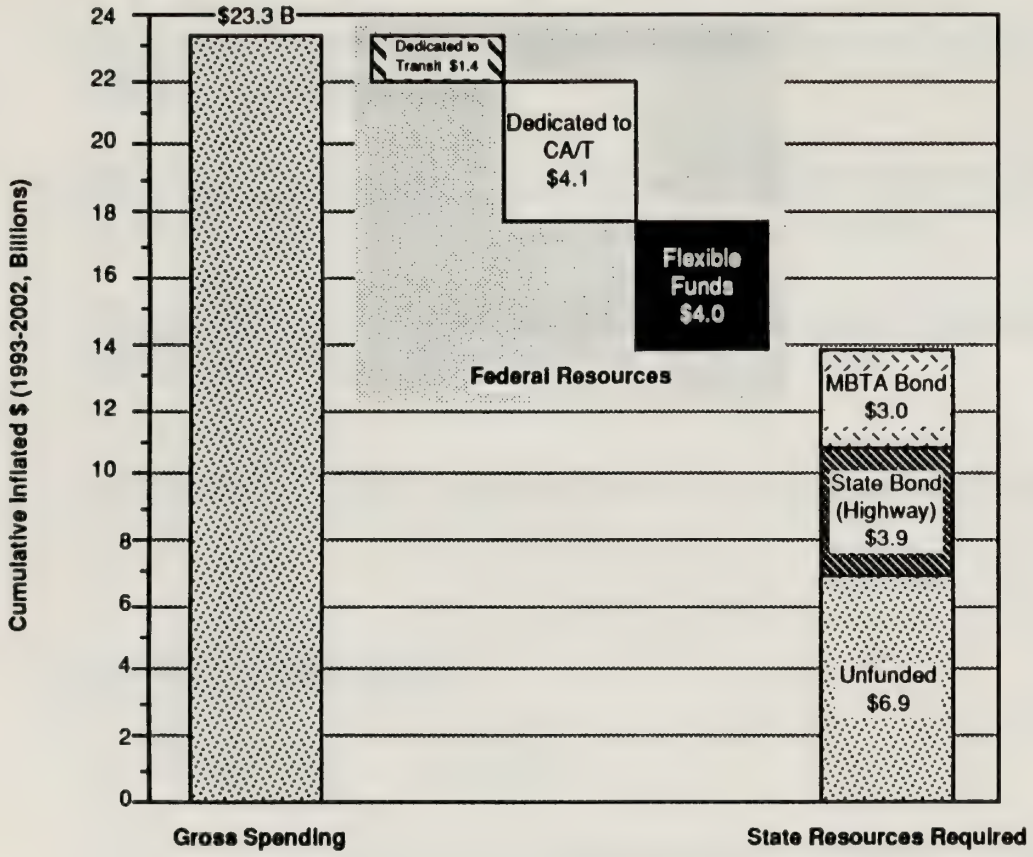
Gross transportation capital project spending is estimated to be $23.3 Billion between 1993 through 2002



- Requirements represent the individual agencies' best estimate of capital spending
- Cost estimates are total, including expected Federal reimbursement
- MassPike and MassPort capital requirements are not included

Note: Cost estimates are in inflated dollars (Billions). Central Artery/THT cost assumes build of 8.1.D.

Federal funding between 1993 and 2002 is anticipated to total $9.5 Billion -- the net requirement for state capital is $13.8 Billion



- Dedicated Transit funds are estimated Section 3, Section 9, and Section 23 appropriations
- Dedicated CA/T funds are estimated Interstate Completion appropriations
- Flexible funds are an aggregate of estimated appropriations for a variety of other Federal transportation programs
- MBTA and State Bond funds available show the existing spending caps

Note: Cost estimates are in inflated dollars.

CLOSING THE FUNDING "GAP"

	Base Assumption	Optimistic
• Reduce/Coordinate Capital Project Spending (5% of Total Gross Spending	($1.1 B)	($2.2 B)
• Manage Operating Cost Growth (Hold MBTA, RTA, and Highway Operating Cost Growth to Inflation)	(0.6)	(0.6)
• Utilize MassPike Net Surplus (Leveraged Capacity, Bifurcated Pike, Current Toll Structure)	(0.3)	(0.3)
	($2.0)	($3.1)
Remaining "Gap" (based on State Unfunded Amount of $6.9 Billion)	$4.9 B	$3.8 B

Remaining Options

- Consider New Revenues
- Cut Project Spending, with Adverse Impact on Service Levels and Other Objectives (i.e., Clean Air attainment)

RECOMMENDED SOLUTION

- Create a stand-alone transportation entity with dedicated revenues
  - Establish dedicated trust fund with independent credit authority
    - •• Dedicate all revenues currently in Highway Fund
  - Coordinate capital project priorities and control spending
  - Control operating cost growth
    - •• Forward fund the MBTA and RTAs
  - Provide entity with the authority to set toll rates and registry fees
- "Bifurcate" the MassPike at Route 128
  - New transportation entity responsible for Extension, Callahan/Sumner Tunnels, and Third Harbor Tunnel
  - Choose a single operator for these facilities based on RFP process
- MassPort assumes responsibility for Logan Airport access projects (i.e., Blue Line, 1A Interchange, etc.)
- Dedicate Motor Vehicle Sales Tax to trust fund
- Raise MBTA fares more in line with national average for fare box recovery ratio (consistent with environmental impact constraints)
- Implement registry fee increases 10 percent (on average) per year
- Implement toll increases in 1995 on existing facilities
- Implement congestion pricing after 1995 to assist in achieving Clean Air attainment and raise incremental revenue. Coordinate with MBTA fare increases.

Projected FY 93 Turnpike Financial Statement by Section

Nominal Dollars in Millions	*Turnpike to Rte 128*	*Boston Extension & Callahan/Sumner Tunnels*	*Turnpike Total*
Gross Revenue	96.6	60.4	157.0
Operating Cost	50.3	24.7	75.0
Net Revenue	46.3	***35.7***	82.0

REDUCE/BETTER MANAGE PROJECT CAPITAL SPENDING

	Impact on Gross Capital Spending	*Service Level Impact*	*Clean Air Attainment, Other Impacts*
1. Cancel Central Artery (Third Harbor Tunnel Only Completed)	$1.0 B*	-	-
2. Do Scheme Z Charles River Crossing Instead of 8.1.d. Settlement	$ 0.4 B†	-	-
3. Reduce or eliminate Chapter 90 Cities and Towns Program	$0.5 to 1.1 B	-	-
4. Reduce or eliminate State Clean Air Implementation Plan (SIP) Transit Projects -- redirect Clean Air effort to reduction of industrial emissions	up to $5.2 B	-	-
5. Defer or reduce Highway Capital Maintenance Program	up to $5.6 B	-	-
6. Defer or reduce Transit Capital Maintenance Program	up to $3.1 B	-	-
7. Develop/Implement an Integrated, Project Level, Transportation Program	$0.7 to 1.1 B	+	+

** Gross savings on total CA/T project cost (including Federal share). The actual savings to the Commonwealth would be $0.2 to $0.4 Billion.*

*† Cost estimate of Scheme Z does **not** include costs associated with potential litigation (legal fees and delays in construction).*

LEGEND

- \+ Positive Impact
- o Neutral Impact
- \- Negative Impact

CENTRAL ARTERY - THIRD HARBOR TUNNEL CAPITAL IMPLICATIONS

(Billion Dollars, Inflated)

	Central Artery	*Charles River Crossing*	*Third Harbor Tunnel*	*Total*
Total Gross Cost (Inflated)	$2.0	$1.0	$3.6	$6.6
Federal Interstate Funds	0.2	0.6	3.3	4.1
Remaining State or Other Federal	$1.8	$0.4	$0.3	$2.5

Potential Reduction to Project Gross Capital Spending ($2.2)

Incremental Required Spending to Rehabilitate Existing Central Artery $1.2

Net Reduction of Total Gross Capital Spending ($1.0)

Each category of estimated capital spending has a set of drivers

CATEGORY	***DRIVERS***
Central Artery/THT	• Congestion on Central Artery and Callahan/Sumner Tunnels • Limited access by road to Logan Airport • Need to replace or substantially refurbish existing elevated structure, which dates from 1950s
Highway Department Capital Program	• Need to maintain safety and functionality of the state's roads and bridges
Chapter 90	• Local communities need resources to maintain safety and functionality of local road networks
MBTA Clean Air/Congestion Mitigation	• Need to attain National Ambient Air Quality Standards (NAAQS) prescribed in Clean Air Act • Boston is currently a "non-attainment area", and, should it continue in that status, the Federal government could cut off up to 100% of transportation funds • The state has made commitments to the Federal government as well as environmental groups that air quality standards will be met by reduction of vehicle emissions in the Boston area • The state's current plan to reduce vehicle emissions consists, in part, of a major effort to get people off the road and on to mass transit • Accordingly, a group of major capital projects designed to expand the MBTA's capacity and ridership has been committed to
MBTA Accessibility	• Need to comply with provisions of Americans with Disabilities Act (ADA), making mass transit accessible to the handicapped
MBTA Recapitalization	• To attract ridership (in accordance with state plan to meet air quality standards), need to maintain acceptable service levels and safety standards on existing system
MBTA Committed	• Projects already contracted
EOTC/MAC/Rail/RTAs	• EOTC/MAC capital programs, High-Speed Rail, RTA recapitalization

MANAGE OPERATING COST GROWTH

- Base highway and transit operating cost growth (7% per year) takes into account:
  - escalation of cost to operate existing system
  - additional costs associated with operating the system expansions called for in the capital program
  - ongoing agency-level cost cutting efforts
- It is assumed that, by integrating cost growth reduction efforts above the agency level, operating cost growth can be brought below 7%
- Reducing total operating cost growth from 7% per year to 3.5% per year saves a cumulative $0.6 billion between 1993 and 2002.

INCREASE REVENUES

	Estimated Financial Impact	*Inherent Assumption*
1. Capture MassPike "Surplus" -- take over Boston Extension and Callahan/Sumner Tunnels only	$150 to 250 million net incremental debt capacity	MassPike bifurcated at Route 128
2. Capture MassPort "Surplus" -- require MassPort to partially fund contiguous capital projects (highway and transit)	$100 to 200 million of capital spending absorbed	MassPort partially funds projects on Blue Line, THT, etc.
3. Dedicate Additional Commonwealth Revenue Sources -- Motor Vehicle Sales Tax	$210 million per year of incremental revenue	Commonwealth dedicates Motor Vehicle Sales Tax
4. Subsidize Transportation from General Fund	$6 to 7 Billion over 10 years	Spending cut on other programs
5. Increase Registry Fees	10 % rate increase raises $40 million in revenue per year	-
6. Increase MBTA Fares	$30 to 50 million in revenue per year	Implement in 1993, gradual increase in fares
7. Increase Existing Tolls	$20 to 30 million in revenue per year	Implement in 1993, gradual increase in tolls
8. Impose New Tolls - Congestion Pricing	$50 to 100 million in revenue per year	Implement in 1995, $3.00 trip toll by 2000
9. Coordinate Pricing Policy Intermodally	Capability to manage elasticities	-
10. Increase Fuel Tax Rate	$0.01 rate increase raises $30 million in revenue per year	-

Note: Revenue impacts are not additive. Pricing decisions have elasticity impacts and affect volume systemwide. Therefore, the revenue impacts of price changes must be examined in relative terms. It is not appropriate to calculate incremental revenue from specific fare/toll increases in a linear fashion.

Commonwealth of Massachusetts, Executive Office of Transportation and Construction

Capital Planning Discussion

June 16, 1992

Deloitte & Touche

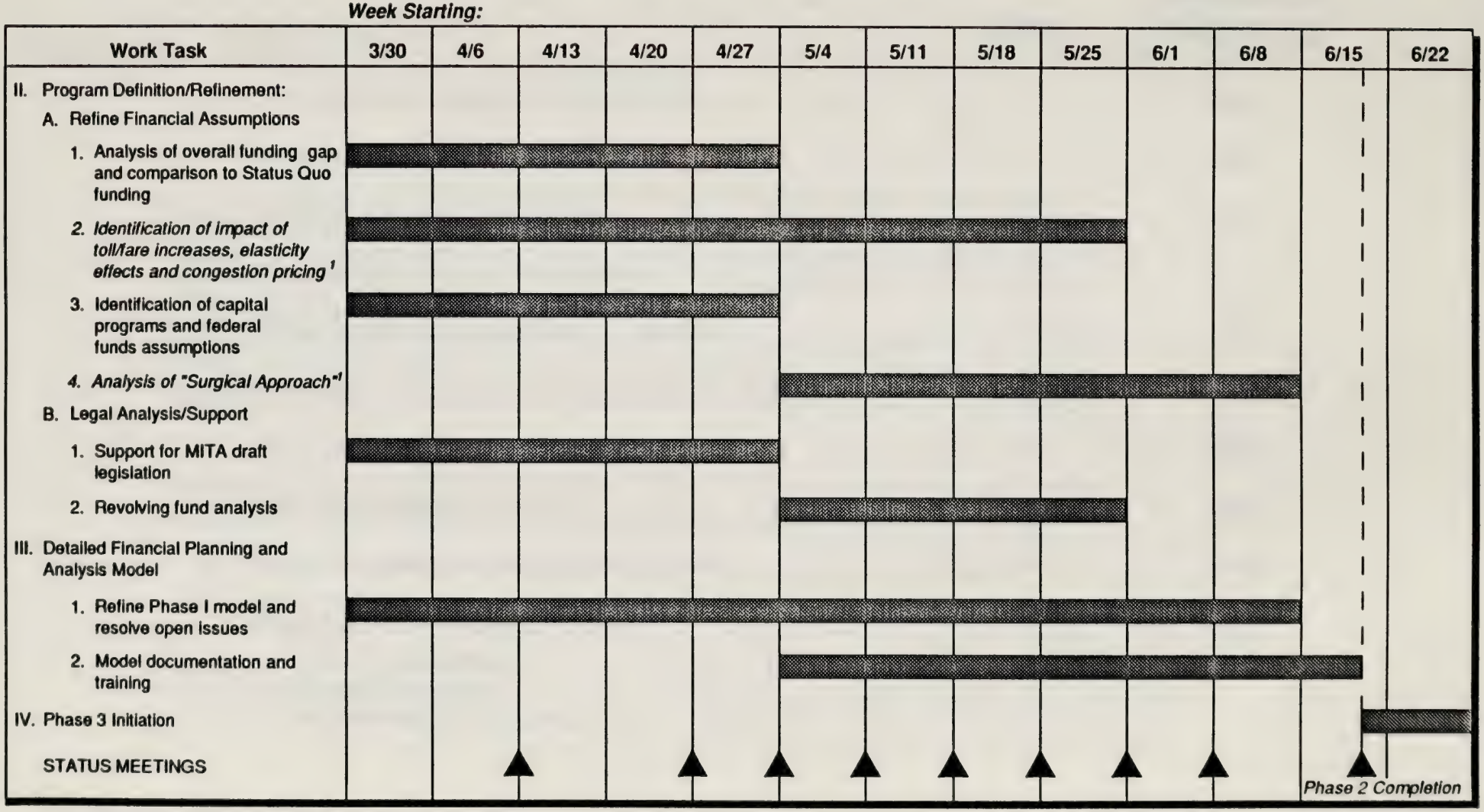
Agenda

- Project Status
- Current Capital Planning Procedure Findings
- Rationale for Improving Planning Procedures
- Overview of a Potential Planning Procedure
- D&T's Financial Planning and Analysis Model in Context
- Discussion

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EOTC Financial Advisory Assistance Project
Phase 2 Work Approach



1. Italics indicate that significant elements of the work task are out of the current contract's scope.

Deliverables

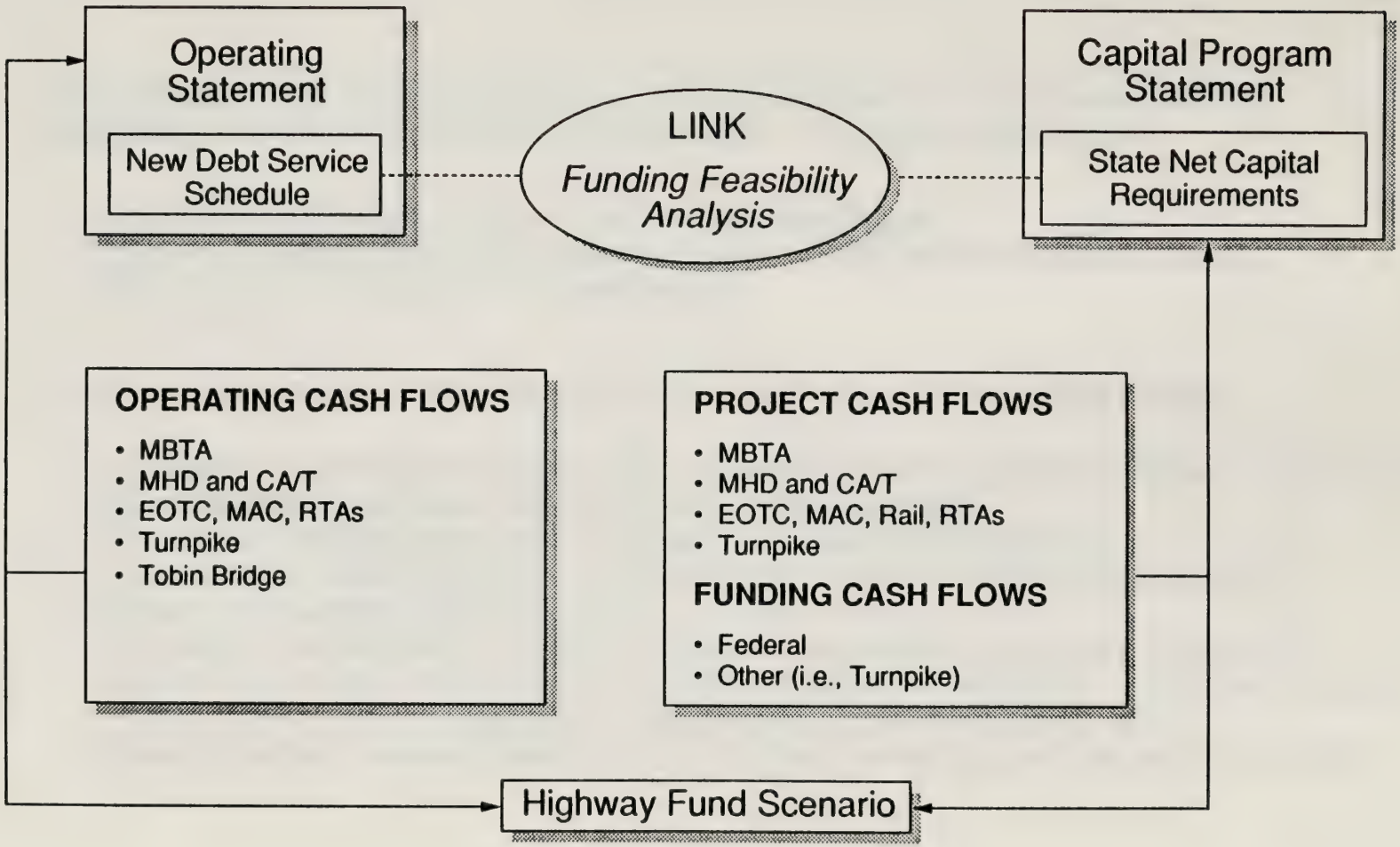
	Phase	Estimated Hours by Deliverable
1. Survey/Policy Issues and Alternatives	I	200
2. High Level Financial Assessment	I	830
3. Detailed Financial Assessment	III	800
4. Financing Issues and Alternatives	I, II	325
5. Financial Planning and Analysis Model	III	265
6. Financial Planning and Analysis Model Training	III	80
7. Non Tax Revenue Improvement Assessment	IV	1,030
8. Program Definition Support	II	200
9. Implementation and Analytical Support	V	NA
10. Facilitation and Analytical Support – Policy Development – Financial Analysis – Implementation Planning	I, II, III, IV, V	415
		4,145

☐ *Deliverables completed and/or initiated during Phase 2*

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Operational View of EOTC Financial Planning and Analysis Model





Current Capital Planning Procedure Findings

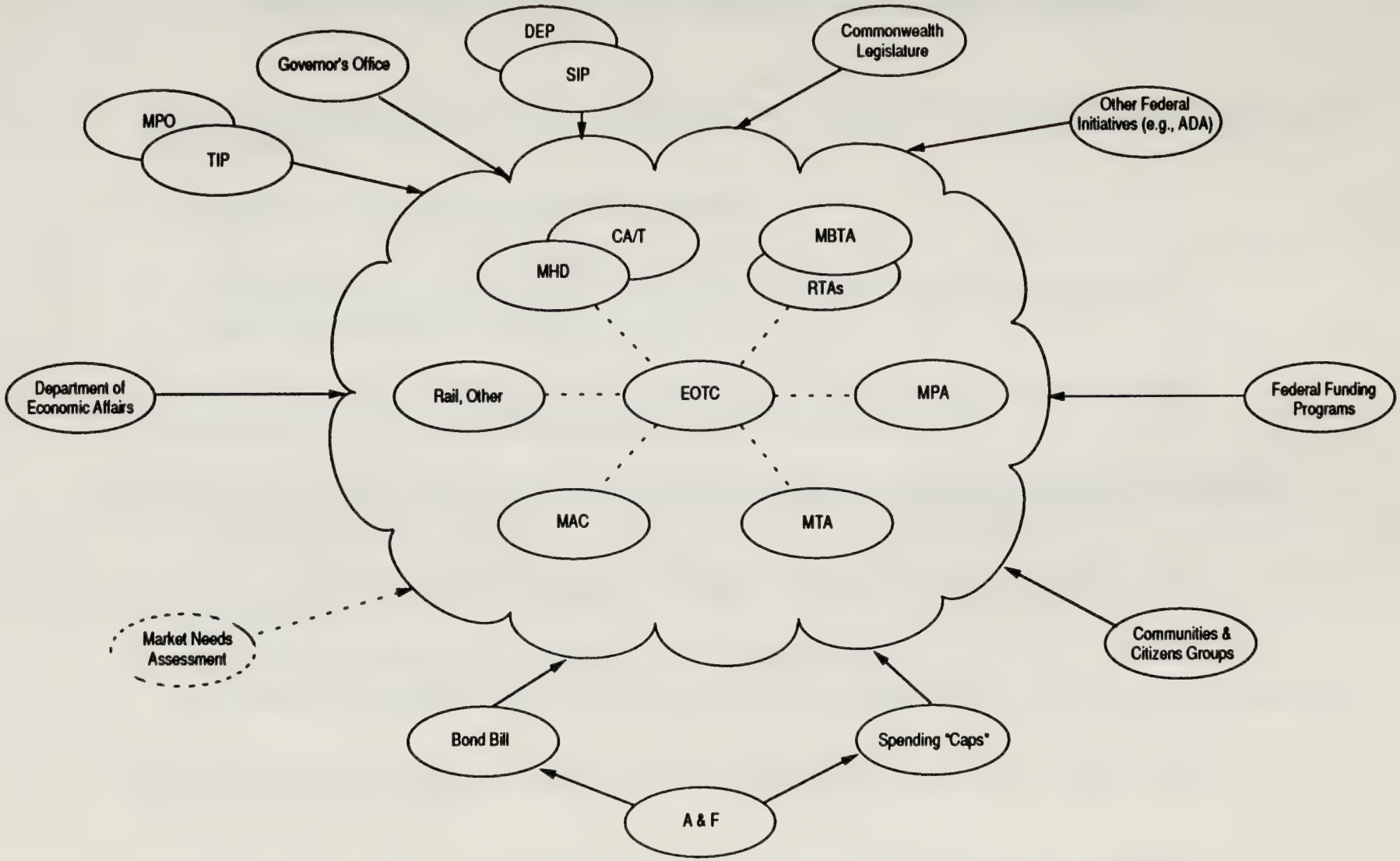
- The current capital planning procedure does not appear to be delivering easily actionable, consistent management information. Symptoms of this are:
  - Confusion about what is "in" or "out" of the overall plan
  - Different interpretations about what project committments have been made
  - Difficulty determining what is "bare bones"

- We have observed the following with respect to capital planning procedures:
  - Departments/authorities interpret Commonwealth transportation priorities independently and overarching initiatives are not clearly communicated
  - Plans, and planning procedures, are not formalized or disciplined
  - No consistent criteria exists for evaluating and selecting projects for execution
  - Limited cost/benefit analysis occurs
  - The quality and integrity of data is suspect - estimates change very frequently
  - Project sequencing and duration assumptions change frequently - little consideration is given to the total cost impact of accelerating or stretching durations
  - Limited linkages between new projects and their operating and maintenance costs

Capital Project Execution Findings

- Project execution does not appear to be well integrated with capital planning. In addition, some shortcomings in project execution appear to exist:
  - Project cost estimating and control
  - Monitoring, managing and reporting
  - Contingency planning
  - Cash flow planning and optimization against resource availability
  - Scheduling and milestone monitoring
  - Contractor management
  - Policies regarding changes and authorization levels

Current Structure And Involved Parties



EOTC monitors planning by agencies, departments and authorities. Multiple constituencies with different agendas interact independently.

State-wide Transportation Strategy Issues

- The capital planning information supporting the strategy is incomplete, inconsistent, and incompatible
- Where should spending priorities be placed?
  - Clean air and other federal commitments
  - Reinvestment in the existing infrastructure - service level improvements
  - System expansions/capacity additions
- What is the absolute minimum necessary level of reinvestment in the existing infrastructure required for safety and service level concerns?
- Economic benefit - where and in what modes will transportation investment result in the highest positive impact on Commonwealth GDP, employment, etc.?
- Is investment in transit the most cost effective means of achieving clean air requirements?
  - Significant difficulty in modifying consumer behavior
  - Rapidly evolving automotive technology (conventional engine efficiency and battery)
- What are the trade-offs between a second metropolitan airport and high speed Northeast Corridor rail?

Agenda

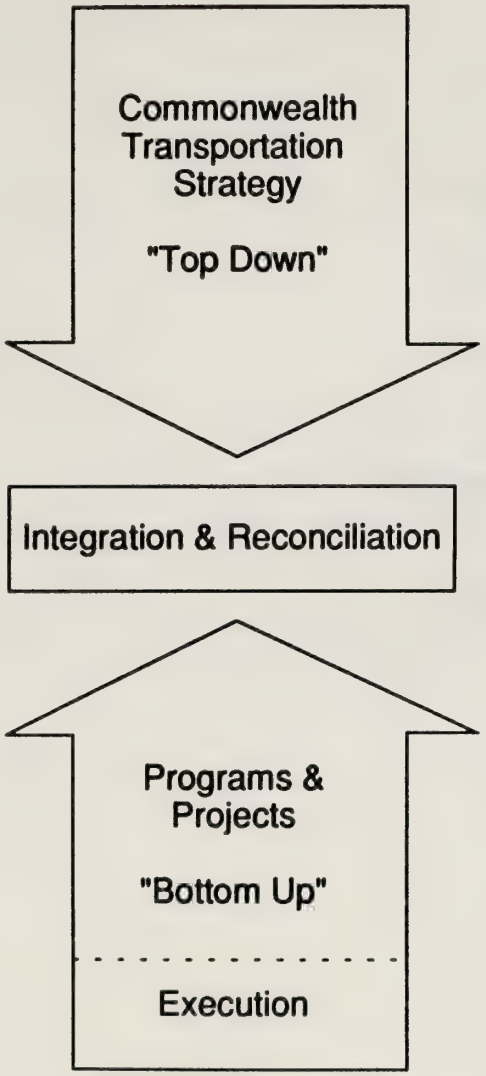
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Rationale For Improving Capital Planning Procedures

- A well integrated capital planning procedure will enable EOTC to achieve three specific results:

Results	*Description*
Communicating	Clear definition and articulation of an integrated, state-wide transportation strategy.
Directing	Effective definition of strategy details through the review and approval of specific capital projects and programs.
Monitoring	Strong management of program execution and costs, ensuring that the transportation strategy is effectively and efficiently implemented.

Developing An Effective Procedure



- Requirements for developing an effective capital planning procedure are:

Coordination and proactive management of constituencies to resolve multiple agendas - drive definition of, and clearly articulate, an integrated, state-wide transportation strategy.

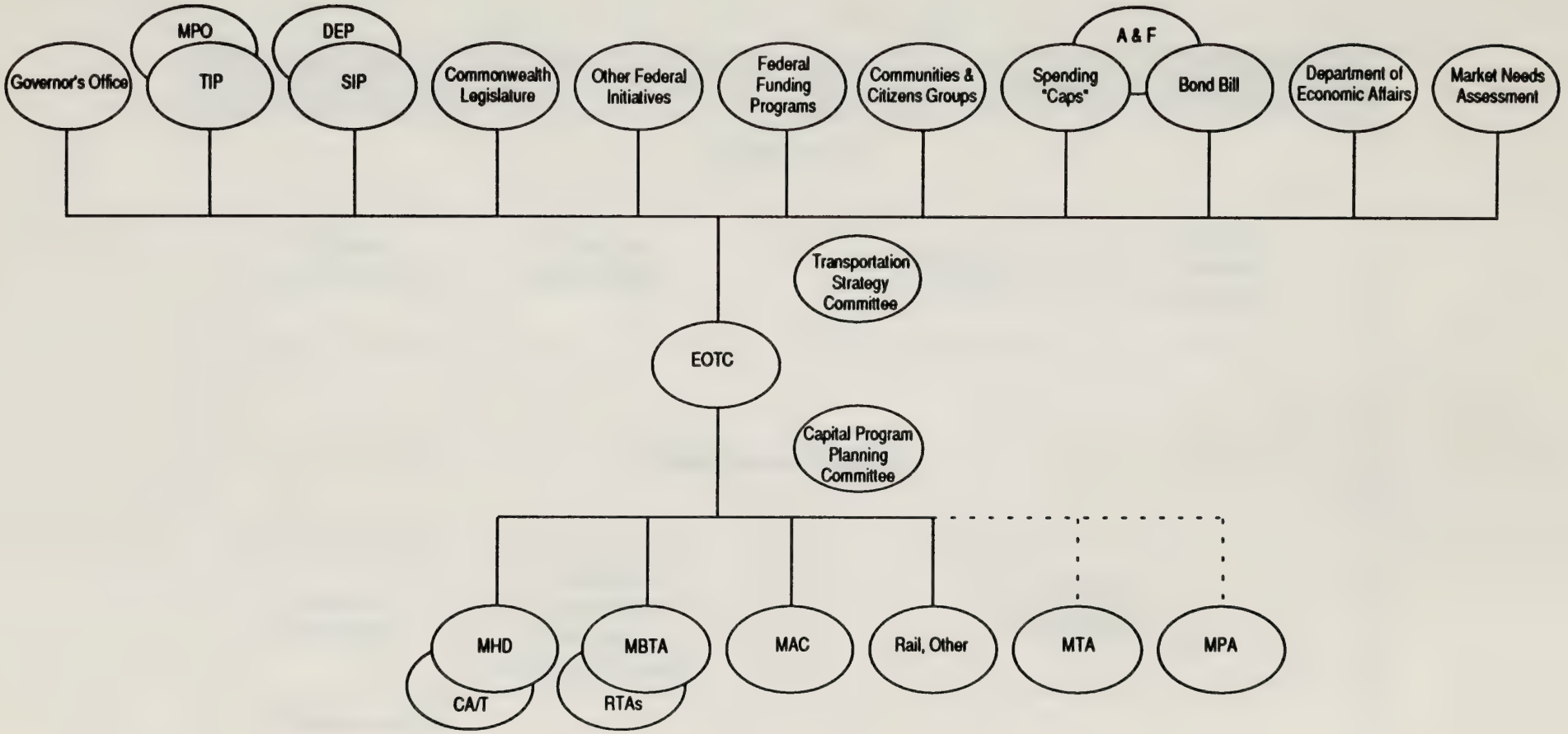
Linkage to ensure transportation strategy is translated into actionable programs and projects.

Rigorous evaluation of project costs, benefits, and timing. Identification of capital spending requirements to maintain existing asset investment at various service levels (and detailed program/project development to accomplish).

Agenda

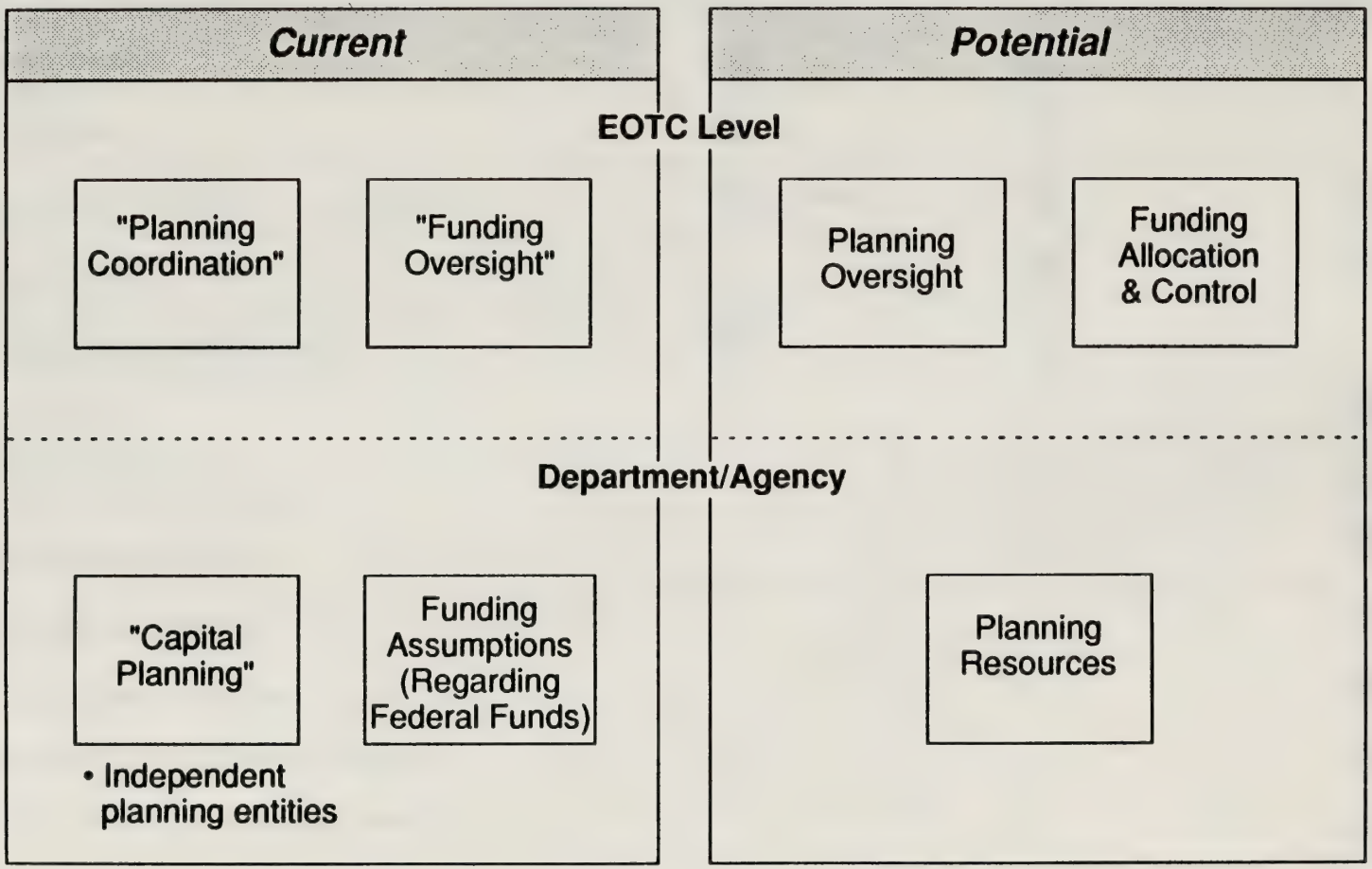
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A Potential Structure For Capital Planning



EOTC "manages" relationship with constituencies and develops/communicates an integrated transportation strategy. EOTC directs and monitors capital plans of agencies, authorities, and departments to ensure implementation of the strategy.

Potential Capital Planning and Funding Allocation Structure





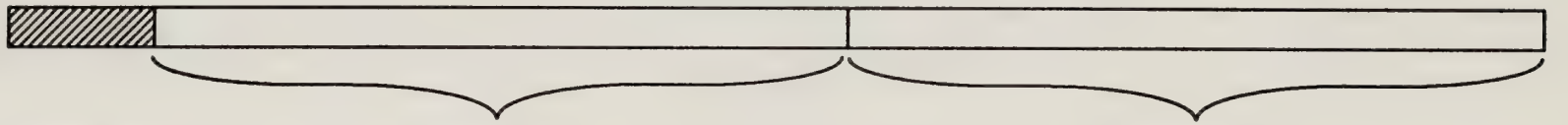
Potential Capital Planning Activities

Key Activities	EOTC		Agency/ Department
	Secretary	Staff	
Establish Strategic Direction	●	▨	
Approval of Overall Plan	●	▨	
Approval of Specific Projects (Subject to Size Authorizations)	● (Significant)	●	● (Small)
Analysis of Market Needs	○	●	▨
Allocation of Resources (e.g., Federal Funds)	●	▨	
Evaluation of Project Plans	○	○	●
Specific Project Development: - Individual Project Feasibility and Needs		○	●
- Cost/Benefit Analysis (e.g., EIRs)		○	●
- Cash Flow and Schedule Development		○	●
- Alternatives and Contingency Planning		○	●
- Program Monitoring (Spending, Schedule, Quality)	○	○	●
- Execution Monitoring (Changes, Contractor Management, Payment)		○	●
- Design and Engineering			●

● Primary Responsibility ○ Oversight Responsibility ▨ Supporting Role

Potential Capital Planning Program -- Plan Parameters

Integrated, Ten-Year Rolling Plan

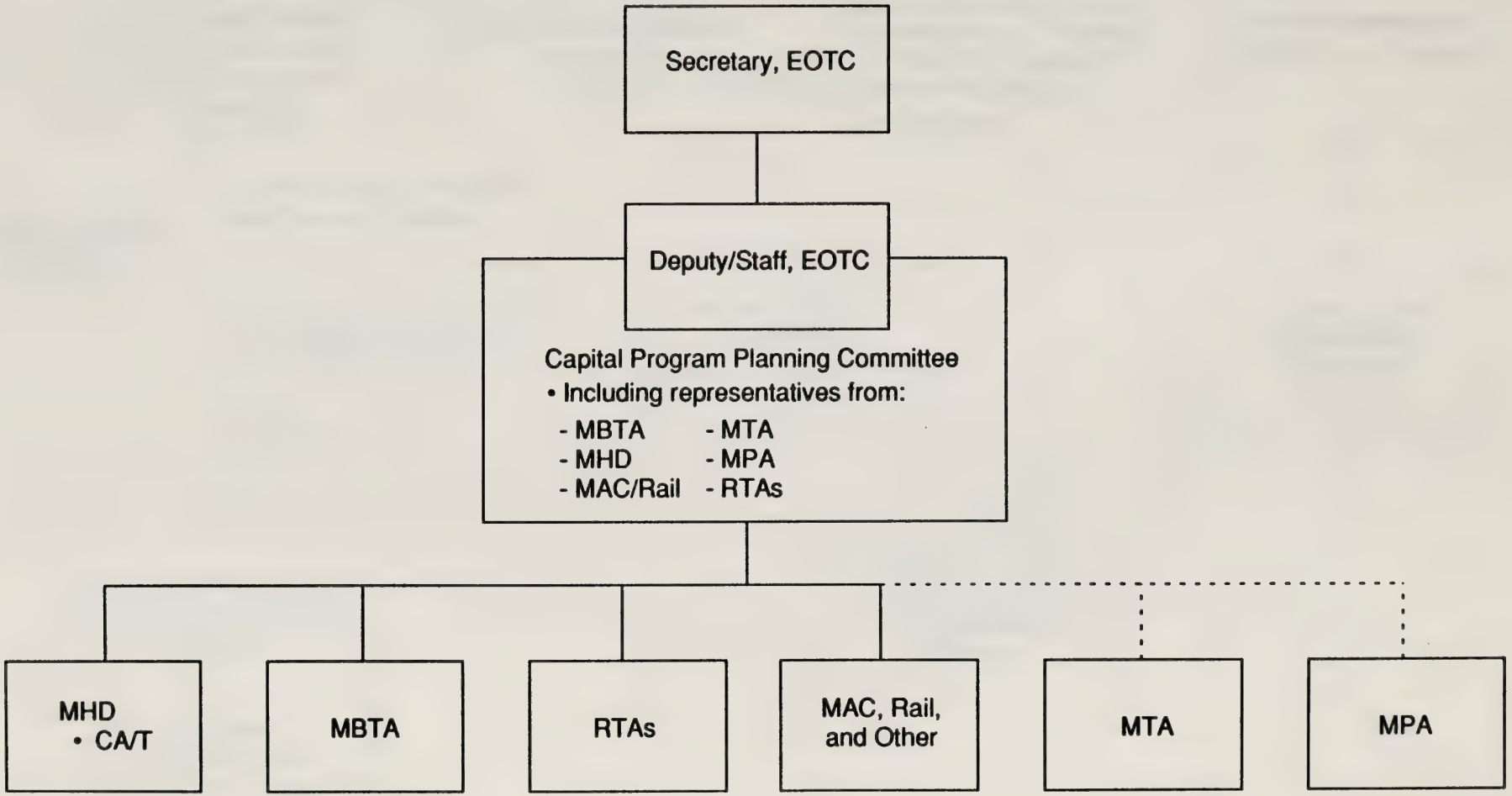


Current Year:	***Years 1 - 5:***	***Years 5 - 10:***
Becomes Capital Program Monitoring Budget	Individual Projects Identified with Base Cost Estimates and Funding Implications. Earlier Years Projects Approaching 100% Design and Later Years Reinvestment Requirement Based on Replacement/Rehabilitation Cycles. (Not Project Specific)	"Strategic" Projects Identified and in Feasibility Stages. Other Project Categories Identified and Broadly Estimated. Reinvestment Requirement Based on Replacement/Rehabilitation Cycle. Funding Requirements Identified.

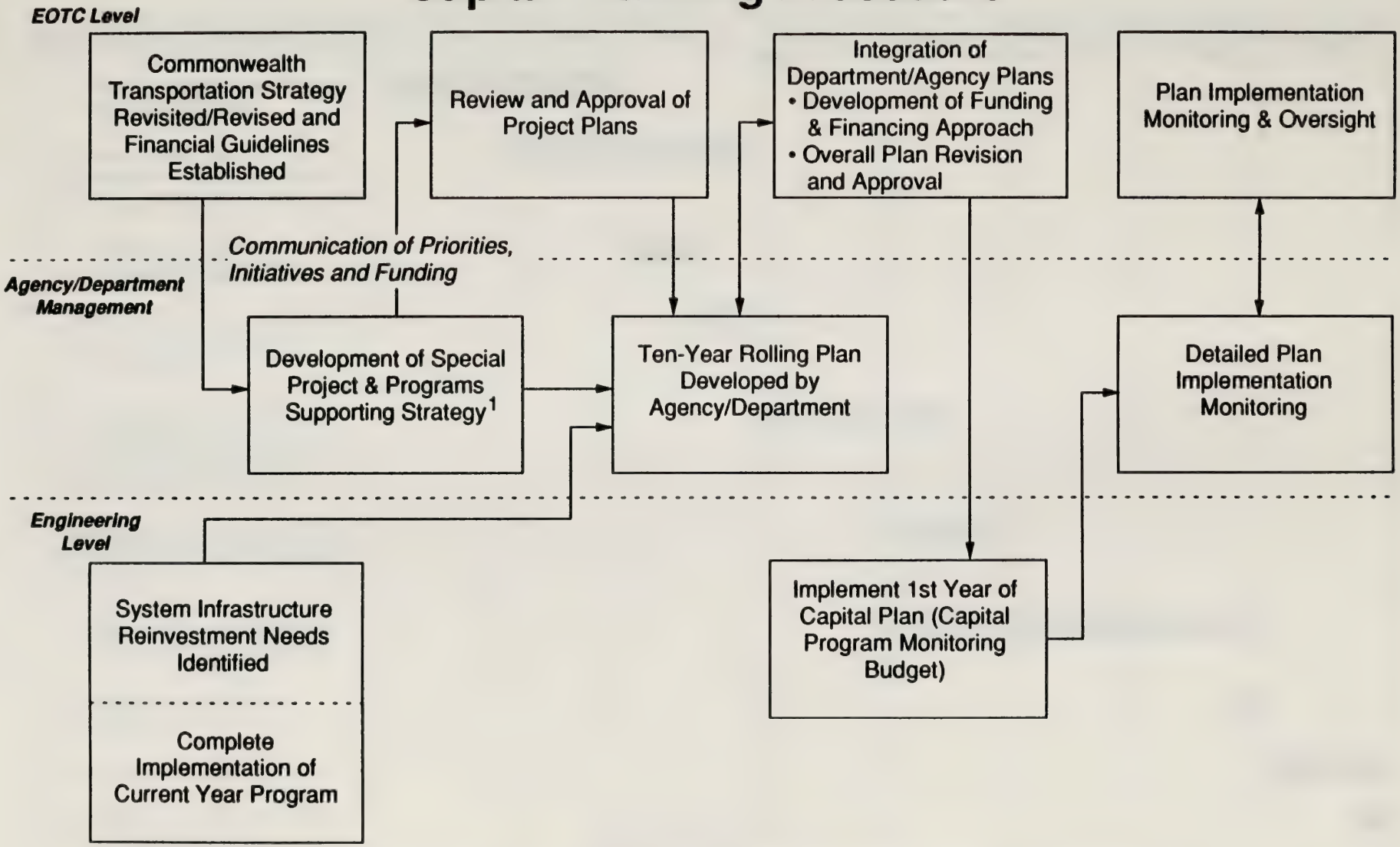
Following Year:

- Year 1 Becomes Capital Program Monitoring Budget
- New "Planning Horizon Year" (Year 11) Added
- Intervening Years Revised and Detailed Design, Engineering and Sequencing Accomplished on Projects in "Close In" Years
- Replacement/Rehabilitation Cycle Investment Estimate Detailed Into Specific Projects (Approximately Years 3 to 4)

Potential Capital Planning Organization



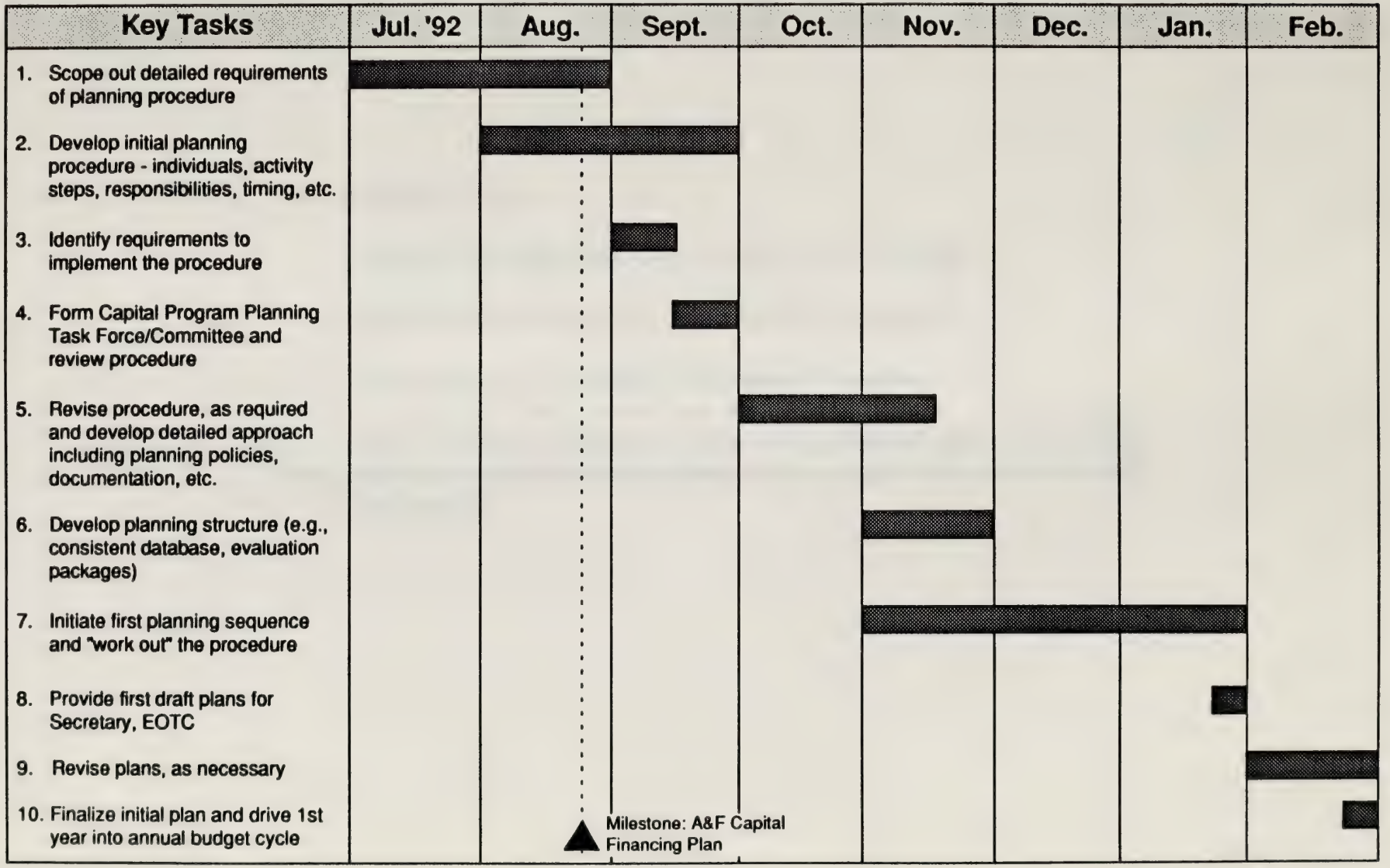
"High Level" View Of Potential Capital Planning Procedure



[1] Potential exists for development of coordinated, "interagency" projects by forming project development teams with participants from different organizations involved.

Potential Capital Planning Procedure

Development Workplan

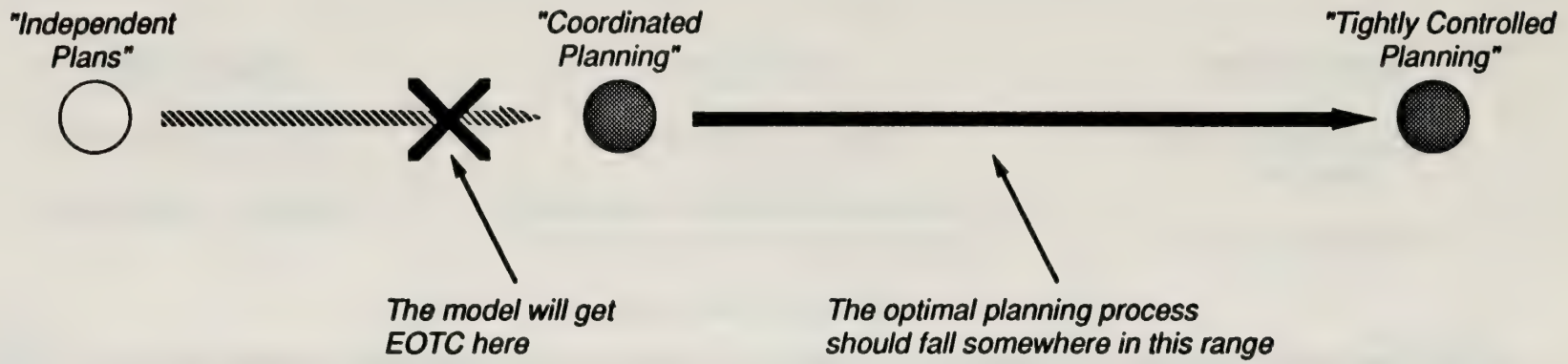


2-06-010-52

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Capital Planning Approaches



- Any point along a spectrum of capital planning processes could be appropriate for the Commonwealth -- ranging from loose coordination to very tightly controlled.
- Currently, agency planning is conducted autonomously with very little coordination or control.
- The D&T model is a tool that facilitates the first step - it will enable EOTC to begin to monitor agency planning and ask "What changed?"
- In our view, the model does not embody the optimal process.

EOTC Financial Planning and Analysis Model

Present Capabilities and Future Possibilities

STANDARD

Reporting format exists

No modification necessary

CUSTOM

Builds on base model

Modification, additional data collection, and further supporting analysis required

Macro-level perspective

POTENTIAL

New model development required

Micro-level perspective

TODAY ——— ***FUTURE***

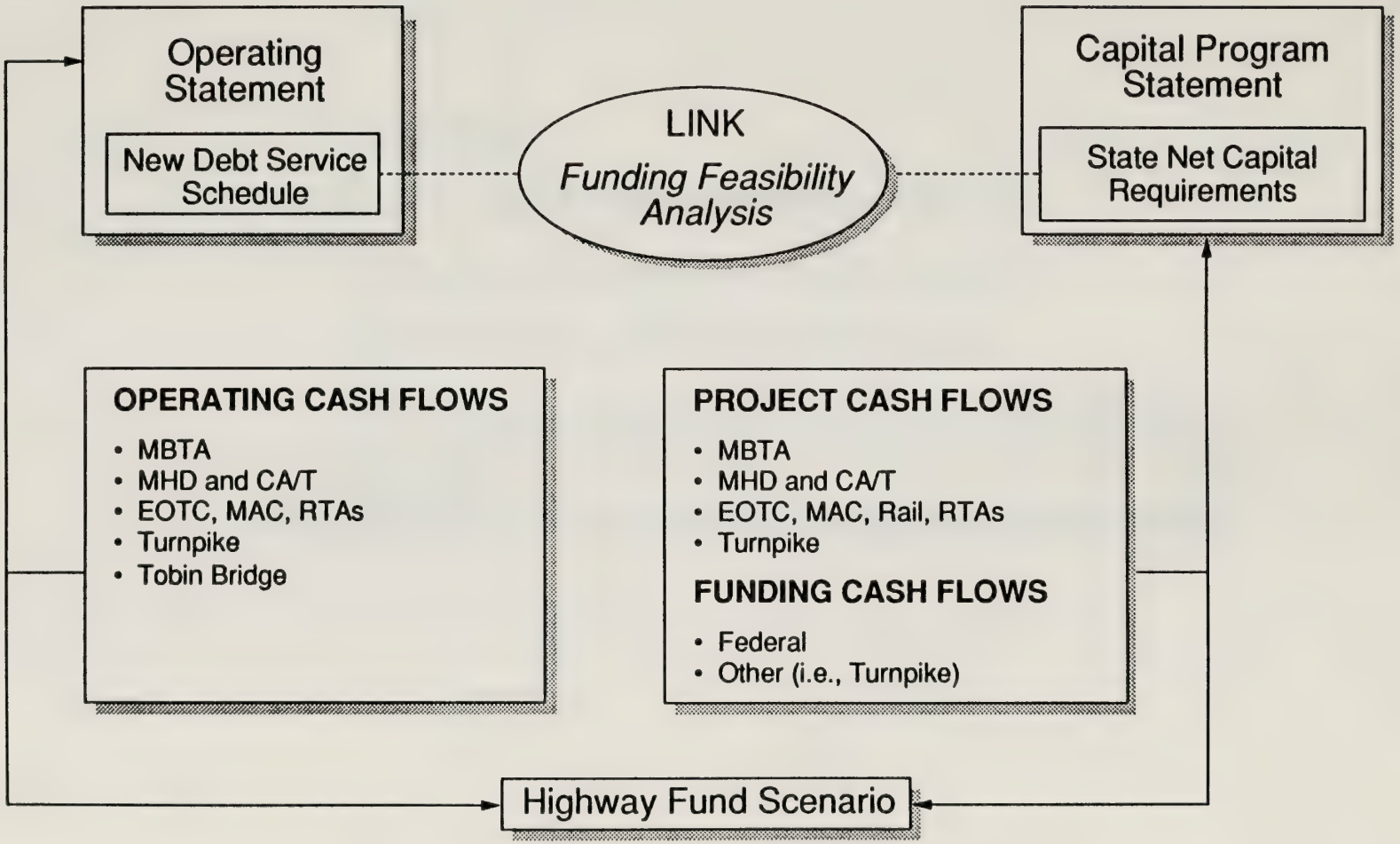
- Agency Capital Program Summaries
- Agency Operating Statements
- Total Transportation Capital Program Summary
- Trust Fund Operating Statement
- Existing Custom Scenarios
  - 13 MITA/MITTF Scenarios
  - 2 MBTA Capital Spending Scenarios
  - "Surgical Approach" Scenarios

- Alternative Capital Spending Scenarios
- Alternative Operating Cost Scenarios
- Alternative Revenue Scenarios
- Alternative Federal Funding Scenarios
- Alternative Debt Structure Scenarios
- Combination Scenarios

- Impact of Capital Project Delays
- Recapitalization Needs of New Projects
- Obligation View of Capital Program

- Specific Toll/Fare Schedules (driven by Revenue Scenarios)
  - traffic assignments
  - price elasticity issues
- Maximization of Federal Funding
- Allocation of Non-IC Funds at Project Level
- Tracking of Actual Expenditures and Variance Analysis

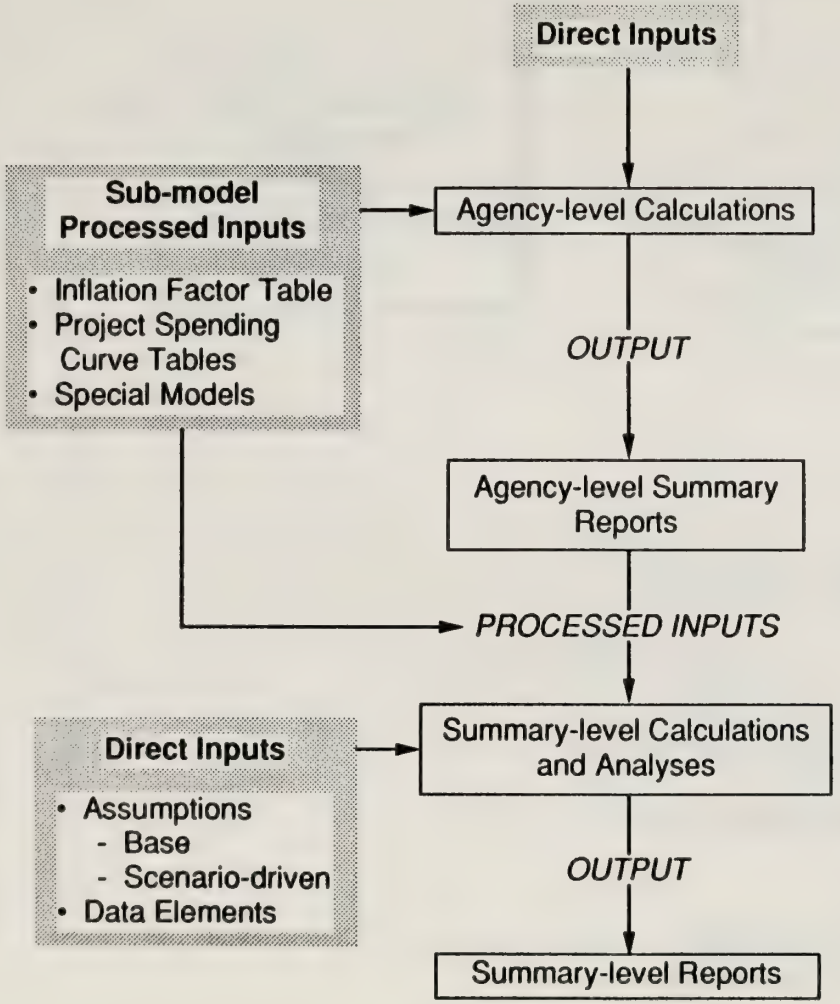
Operational View of EOTC Financial Planning and Analysis Model



Agenda

- Project Status
- Current Capital Planning Procedure Findings
- Rationale for Improving Planning Procedures
- Overview of a Potential Planning Procedure
- D&T's Financial Planning and Analysis Model in Context
- Discussion

Functional Overview of the EOTC Financial Planning and Analysis Model



- Assumptions
  - Base
  - Scenario-driven
- Data Elements

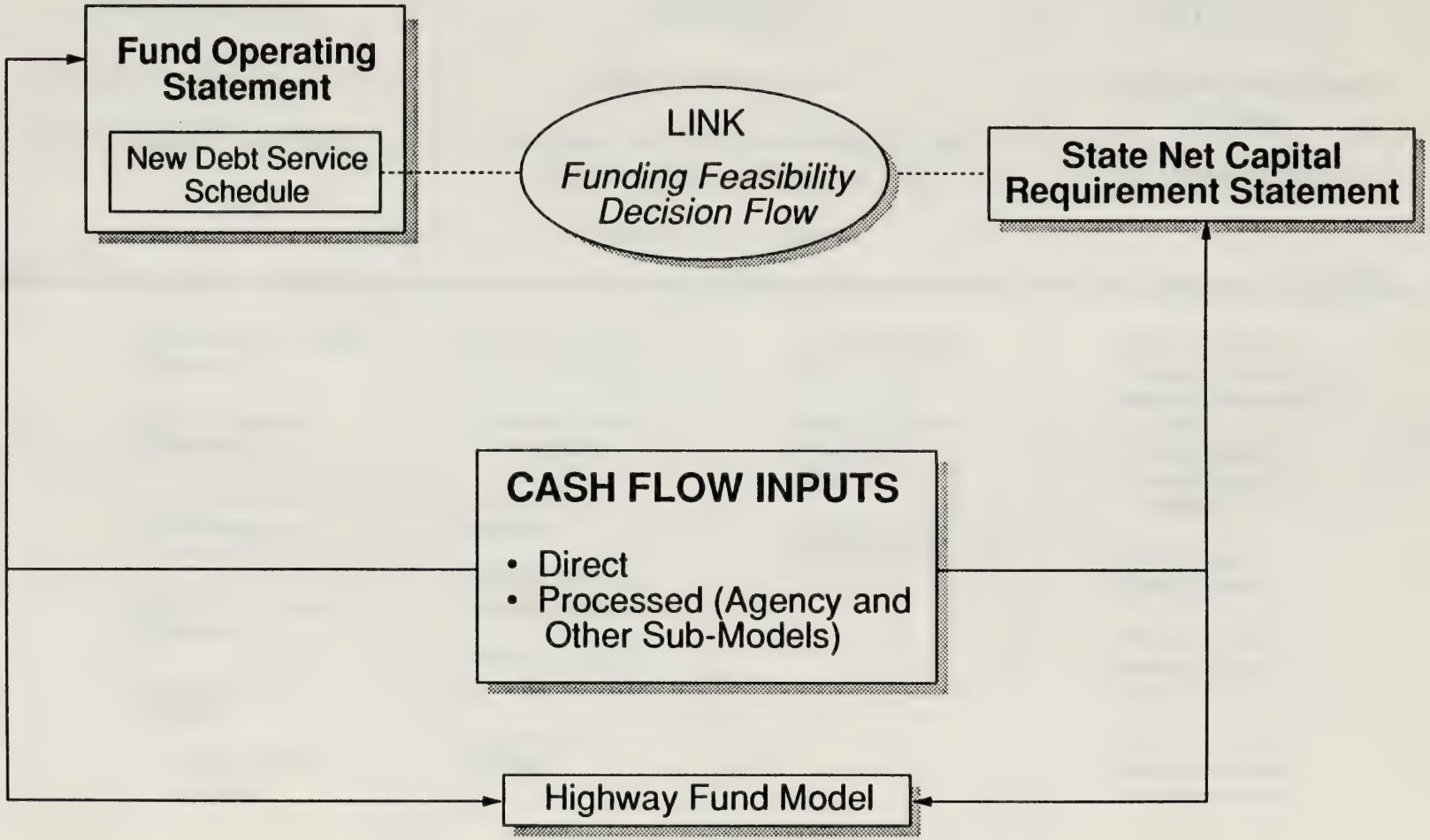
- Detailed Operating Cash Flow Projections (MBTA, RTAs)
- Detailed Capital Project Cash Flow Projections
  - Cash Flows
    - Total
    - Conceptual Funding Splits (MHD, CA/T)
  - Dedicated Federal Funding (MBTA)

- Agency Operating Statements (MBTA, RTAs)
- Agency Capital Program Statements
  - Cash Flows by Project/Cost Category
    - Total
    - Conceptual Funding Splits (MHD, CA/T)
  - Dedicated Federal Funding (MBTA)

- Revenue and Cost Cash Flows
- Annual Cash Surplus/(Deficit) Calculation
- Annual Fund Ending Balance Calculation
- New Debt Service Calculations
- Funding Surplus/(Shortfall) Calculation
- Funding Feasibility Decision Flow

- Fund Operating Statement
- New Debt Service Schedule
- State Net Capital Requirement Statement
- Highway Fund Model

Operational Overview of the EOTC Financial Planning and Analysis Model



EOTC Financial Planning and Analysis Model

Present Capabilities and Future Possibilities

STANDARD

Reporting format exists

No modification necessary

CUSTOM

Builds on base model

Modification, additional data collection, and further supporting analysis required

Macro-level perspective

POTENTIAL

New model development required

Micro-level perspective

TODAY ——————————————————————————— ***FUTURE***

- Agency Capital Program Summaries
- Agency Operating Statements
- Total Transportation Capital Program Summary
- Trust Fund Operating Statement
- Existing Custom Scenarios
  - 12 MITA/MITTF Scenarios

- Alternative Capital Spending Scenarios
- Alternative Operating Cost Scenarios
- Alternative Revenue Scenarios
- Alternative Federal Funding Scenarios
- Alternative Debt Structure Scenarios
- Combination Scenarios

- Impact of Capital Project Delays
- Recapitalization Needs of New Projects
- Obligation View of Capital Program

- Specific Toll/Fare Schedules (driven by Revenue Scenarios)
  - traffic assignments
  - price elasticity issues
- Maximization of Federal Funding
- Allocation of Non-IC Funds at Project Level
- Tracking of Actual Expenditures and Variance Analysis

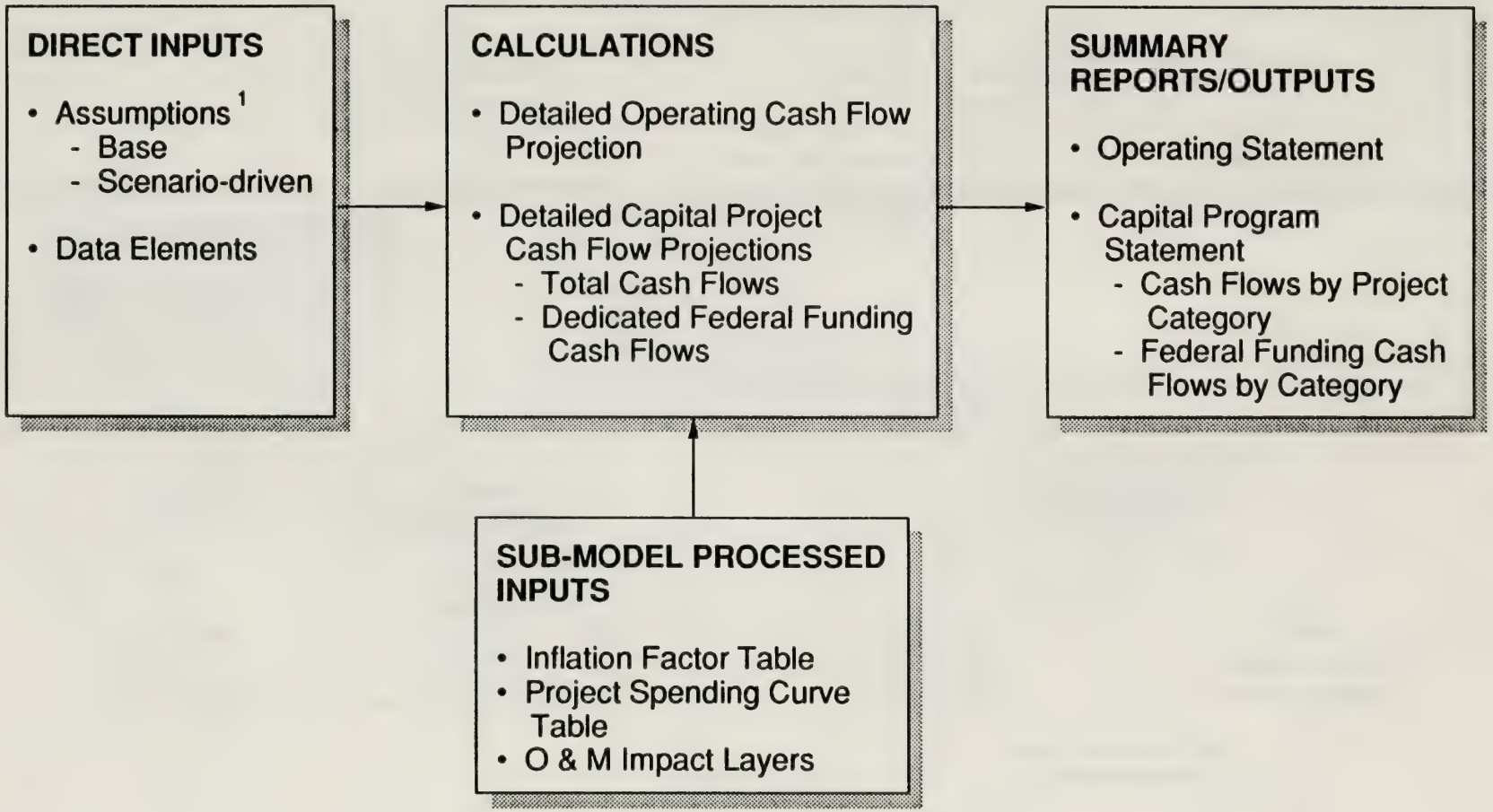
Commonwealth of Massachusetts, Executive Office of Transportation and Construction

MBTA Financial Planning and Analysis Module

Documentation and User Training Package

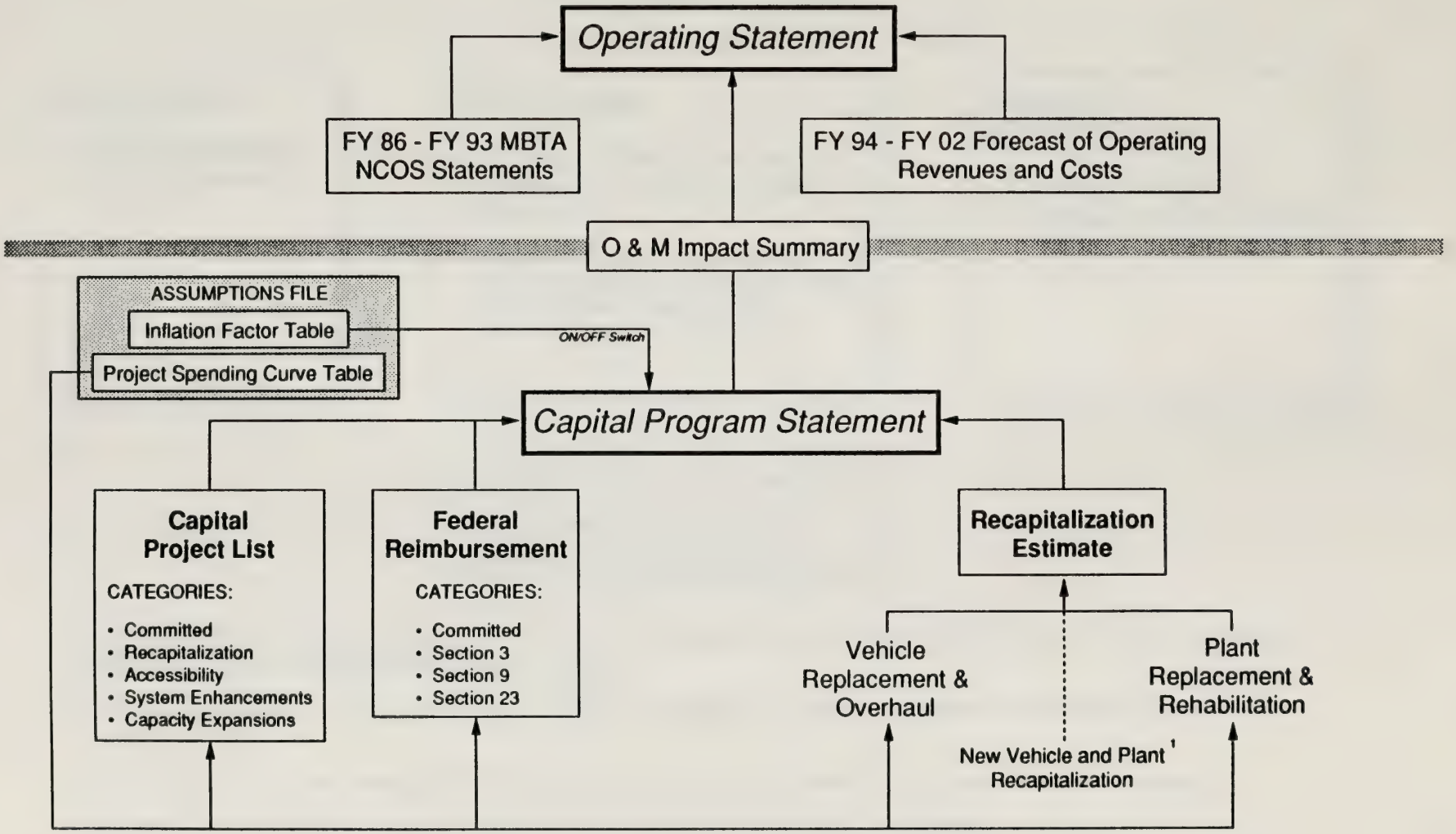
Deloitte & Touche

Functional Overview of the MBTA Module



1. Assumptions are explained in detail on the Assumptions page of the model printout.

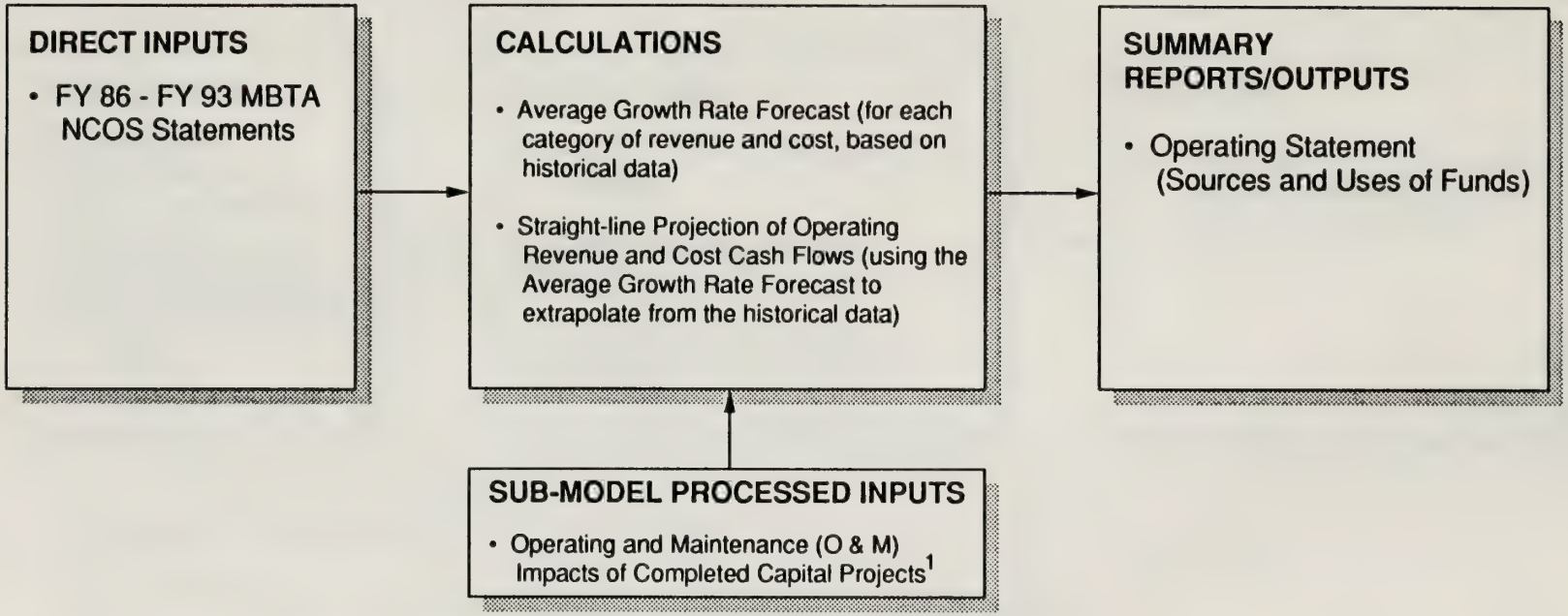
Operational Overview of the MBTA Module



1. The recapitalization impacts of new capital projects have not been analyzed and incorporated in the model.

Operating Statement

Functional View

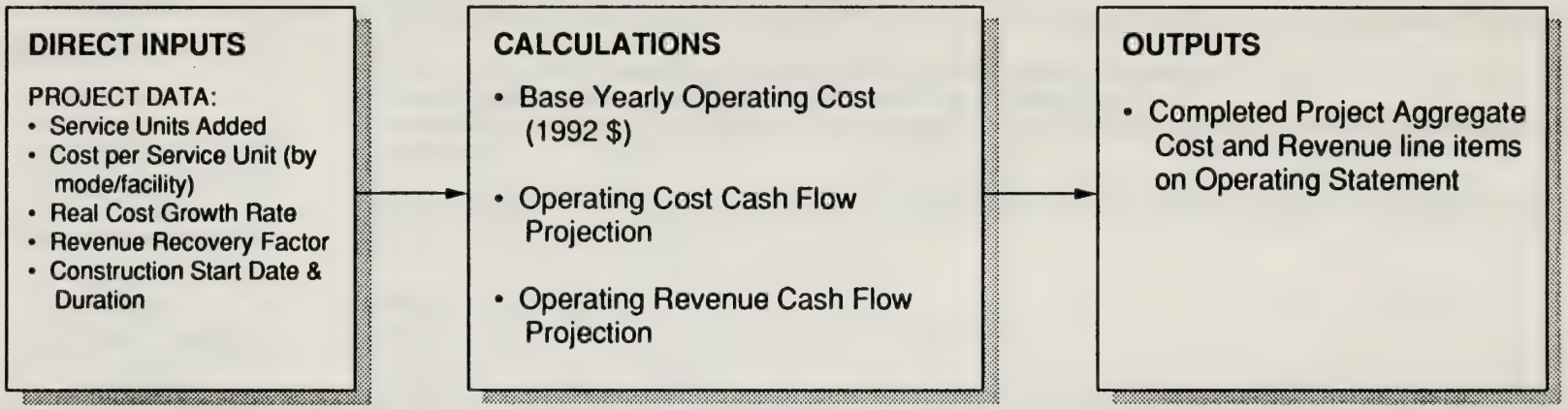


- Historical Net Cost of Service data and near-term MBTA operating projections for FY 92 and FY 93 were directly input to the "Sources and Uses of Funds" format
- For each category of revenue and cost, nominal annual growth rates were calculated for the period FY 86 through FY 93
- These growth rates were averaged to form the basis for projecting future annual growth in each category
- Because the growth rates were calculated from nominal dollars, inflation is implicit in the projections

1. O & M Impacts are discussed on the next page.

The Link Between the Operating Statement and the Capital Program

Operating and Maintenance Impacts of Completed Capital Projects



- Service Units Added from MBTA project information
- Cost per Service Unit calculated by mode from 1990 Section 15 operating data
- Real Cost Growth Rate and Revenue Recovery Factor calculated at gross level, averaging relevant historical data for the period 1986 through 1991
- Construction Start Date and Duration from Capital Project List database
- Base Yearly Operating Cost = Service Units Added * Cost per Service Unit (in 1992 dollars)
- Base Cost is escalated for each year using the Real Cost Growth Rate; Revenue is calculated as a percentage of each year's cost using the Revenue Recovery Factor

Capital Program Statement

Major Components

Capital Project List

CATEGORIES:

- Committed
- Recapitalization
- Accessibility
- System Enhancements
- Capacity Expansions

- Category definitions:
  - Committed: project budgets established, contracts let or advertised
  - Recapitalization: specific projects identified in MBTA Five Year Plan for rehabilitation/replacement of elements of the existing system
  - Accessibility: projects required to comply with Federal and State accessibilty regulations
  - System Enhancements: projects for improvement of existing facilities/services
  - Capacity Expansions: projects for expansion of passenger capacity on the existing system or extension of the system to new service areas
- Project cash flows subtotal by category; subtotal lines link to summary program statement; can be tailored to different scenarios

Federal Reimbursement

CATEGORIES:

- Committed
- Section 3
- Section 9
- Section 23

- Category definitions:
  - Committed: funds allocated to "Committed" projects (see definition above)
  - Section 3: project-specific funding
  - Section 9: formula-driven funding, no assumptions made regarding allocation to specific projects
  - Section 23: remaining Interstate Transfer (highway) funding for transit, no assumptions made regarding allocation to specific projects
- Cash flows subtotal by funding category; subtotal lines link to summary program statement

Recapitalization Estimate

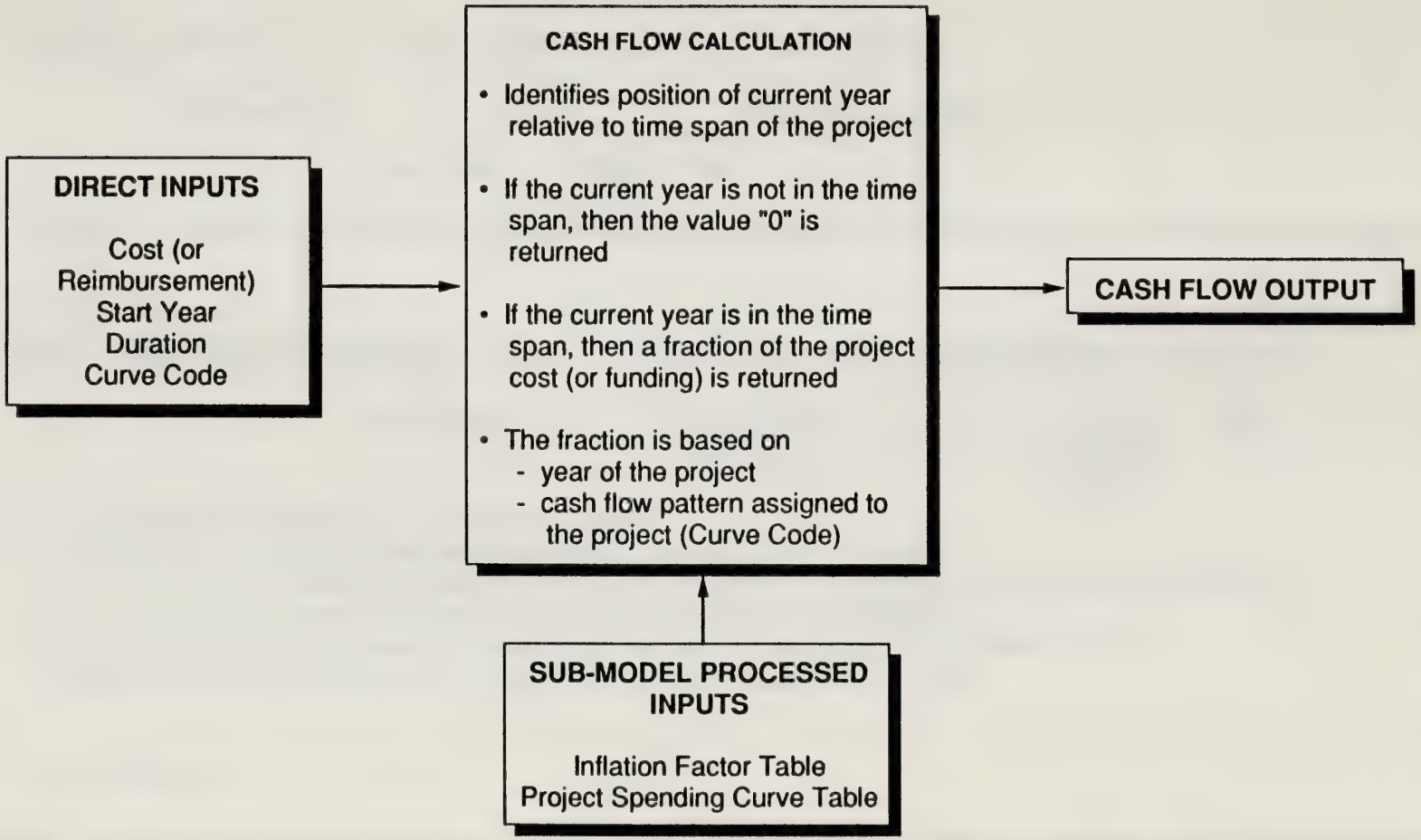
- Vehicle
- Plant

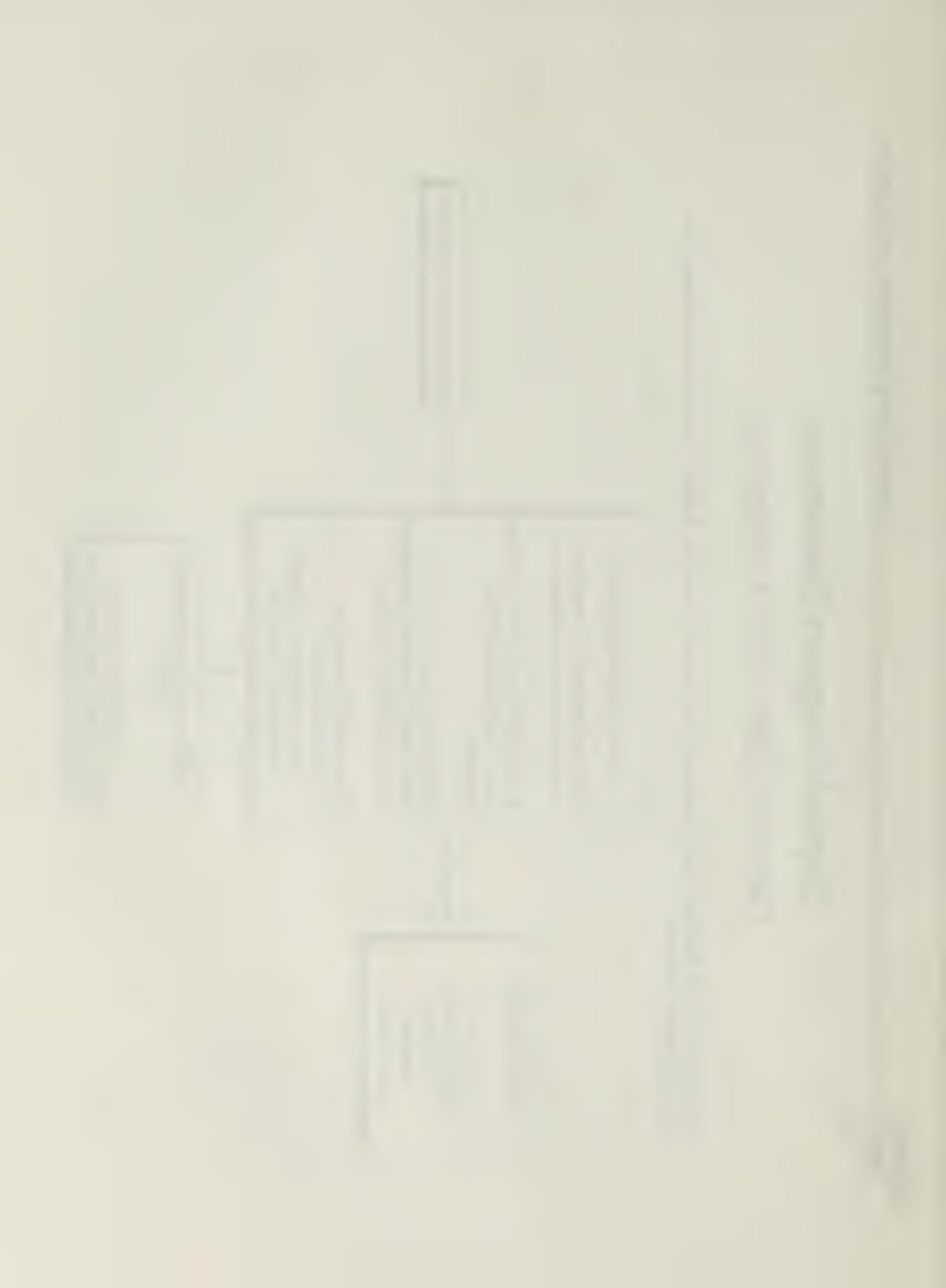
- The Estimate assumes that the bulk of recapitalization requirements through SFY 1996 are provided for by the MBTA's Five Year Plan. These needs are not "double-counted" in the Estimate.
- Vehicle recapitalization estimate simulates fleet overhauls and replacements on a project-by-project basis over a twenty year period. Simulation is based on expected useful lives of each fleet.
- Plant recapitalization estimate is an annualized figure based on the MBTA's life cycle model.
- Recapitalization impacts of new capital projects are not incorporated in the model.

Capital Program Statement

Generic Cash Flow Architecture

- The model structure depicted below is common to the Capital Project List, Federal Reimbursement estimate, and Recapitalization Estimate





Capital Program Statement

Generic Project Cash Flow Calculation

Basic Structure: @IF(condition, "true" value, "false" value)

Condition: @IF(K$7 >= $G11 #AND# K$7 < ($G11+$H11),

- K$7 — *Current Year*
- $G11 — *Start Year*
- #AND# — *Link*
- K$7 — *Current Year*
- ($G11+$H11) — *Start Year+Duration*

- To satisfy the condition, the current year must be within the time span of the project (defined by Start Year and Duration)

"True" Value: @VLOOKUP($I11,<<ASSUMP.WK3>>$SPENDCURVE,(K$7-$G11)+1)*$F11,

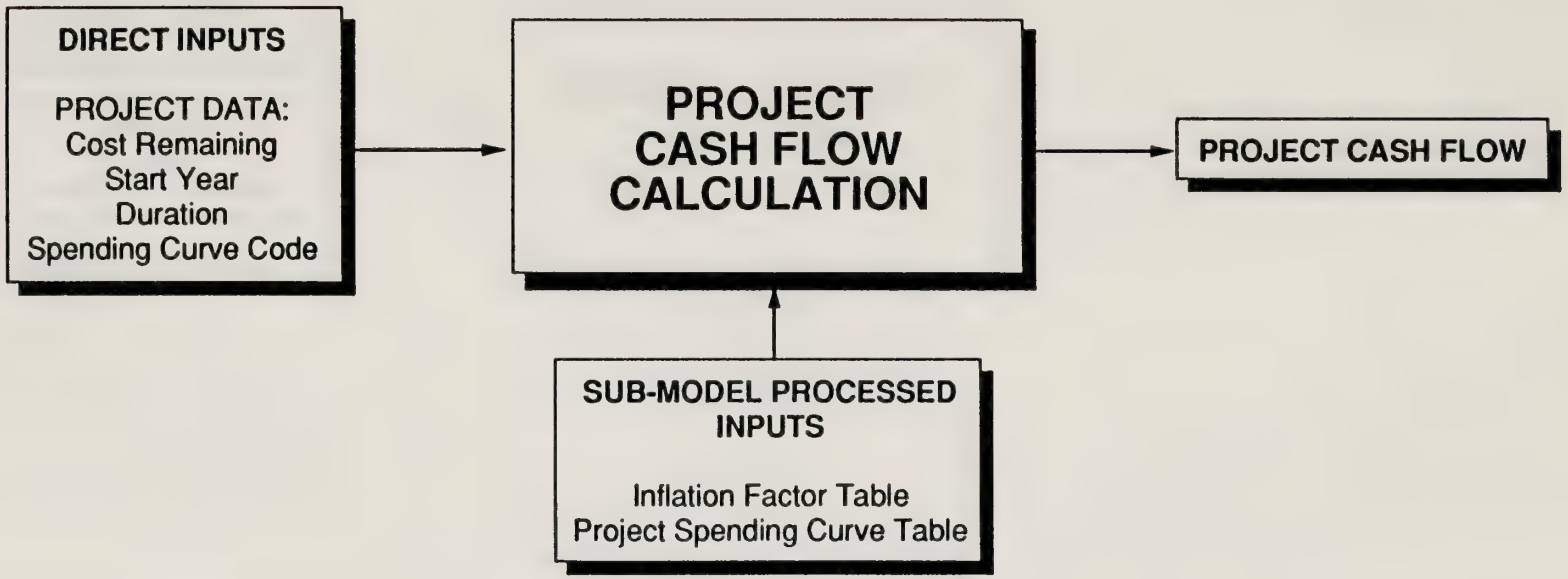
- $I11 — *Curve Code*
- <<ASSUMP.WK3>>$SPENDCURVE — *File and Range identification*
- (K$7-$G11)+1 — *Current Year-Start Year+1*
- $F11 — *Cost*

- If the condition is satisfied, the "true" value is returned
- The "true" value is a fraction of the cost allocated to the project in the database
- The function "looks up" the proper fraction in the Project Spending Curve Table, and multiplies it by the cost
  - the Curve Code assigned to the project identifies the proper row in the Table
  - the File and Range names identify the range containing the Project Spending Curve Table
  - Current Year minus Start Year plus 1 identifies the proper column in the Table

"False" Value: 0)

Capital Program Statement

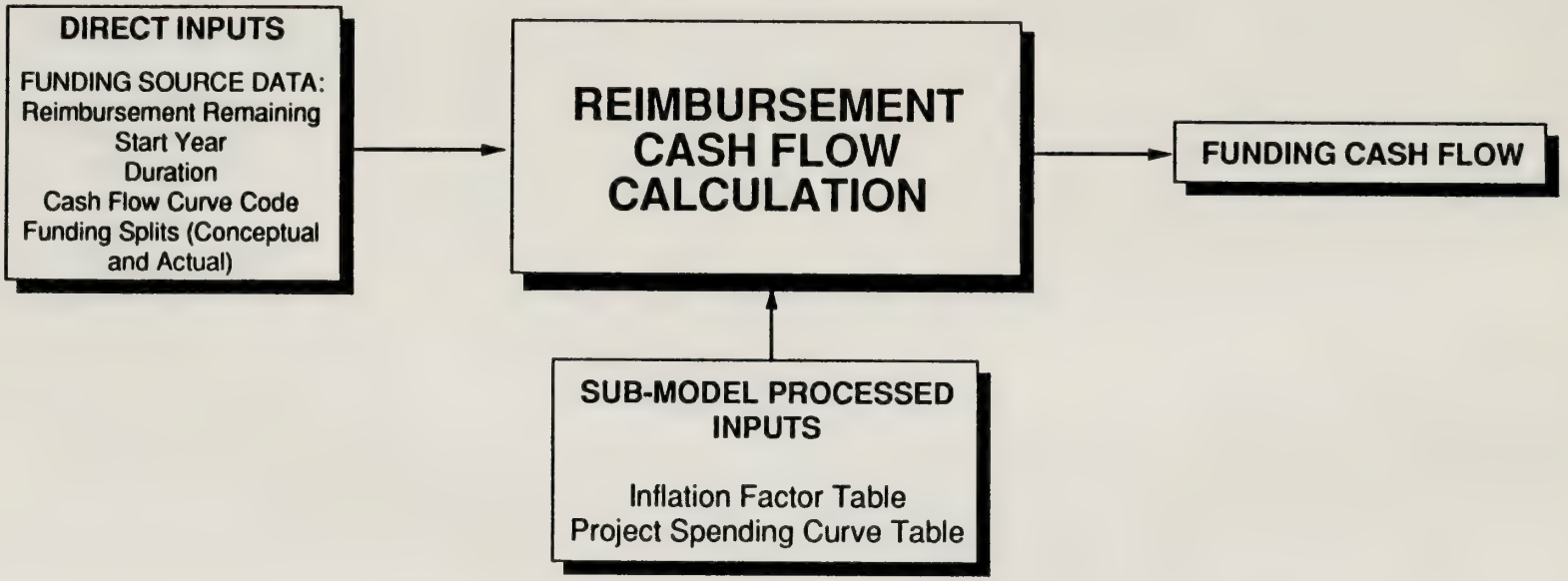
Functional View of Capital Project List



- Data sources noted on Assumptions page of model output
- Not all data in the project databases are operative in the logic functions -- the items listed below are included as "FYI" items
  - Project ID number: Arbitrary number assigned to numerically differentiate projects (for data sorts, etc.)
  - Total Project Cost and Duration: These are different from "Cost Remaining" and "Years Remaining" only if some portion of the project is already completed or committed to
- Some project cash flows, due to their variance from the standard spending patterns available in the Project Spending Curve Table, are direct inputs (Curve Code "M")
- Committed cash flow is not subject to inflation

Capital Program Statement

Functional View of Federal Reimbursement Estimate



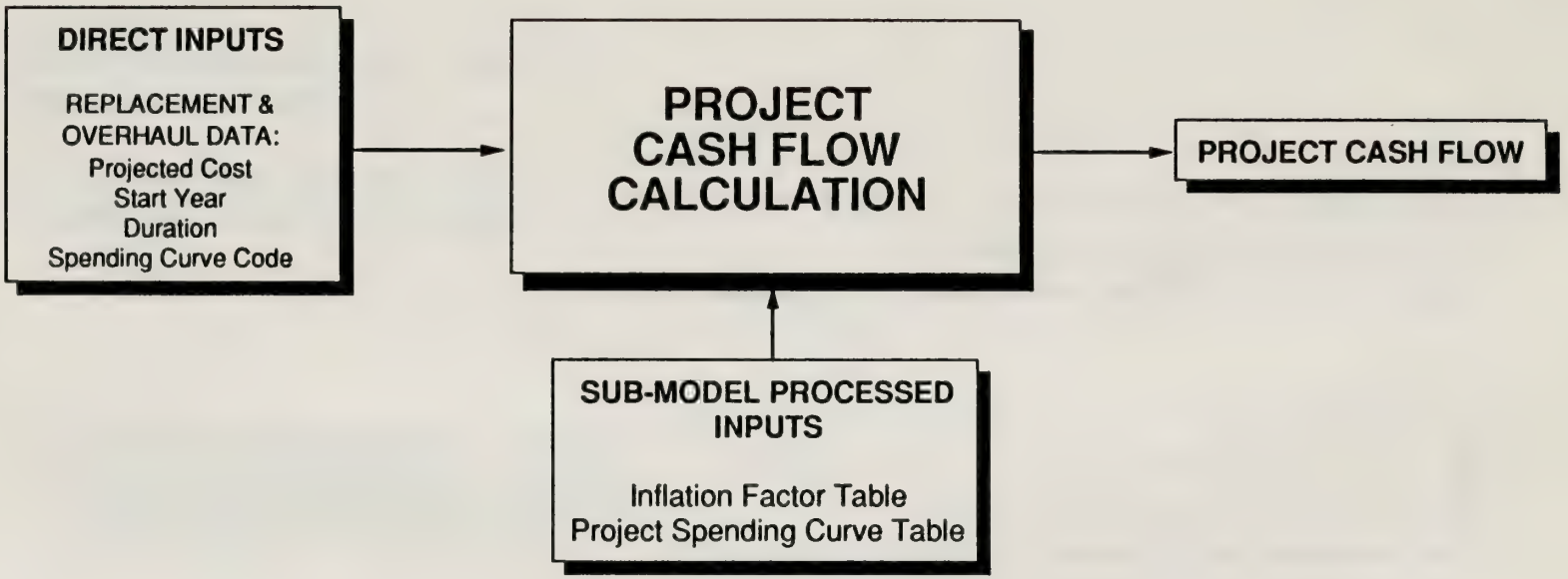
- Data sources noted on Assumptions page of model output

- Not all data in the databases are operative in the logic functions -- the items listed below are included as "FYI" items
  - Project ID number: Arbitrary number assigned to numerically differentiate projects (for data sorts, etc.)
  - Total Project Cost: This is different from "Cost Remaining" only if some portion of the project is already completed or committed to
  - Federal Funding Level refers to the effective Federal/State "split" on project cost (Section 3 only)
  - Federal Share identifies the total actual amount of Federal funding expected for a project (Section 3 only)

- Committed, Section 9, and Section 23 cash flows are not subject to inflation

Capital Program Statement

Functional View of Recapitalization Estimate



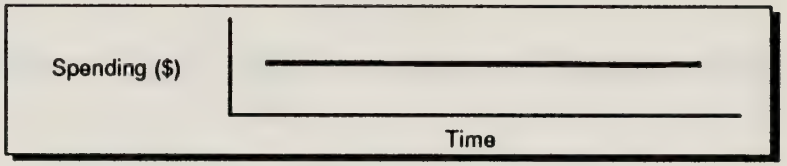
- Data sources and assumptions noted on Assumptions page of model output

Capital Program Statement

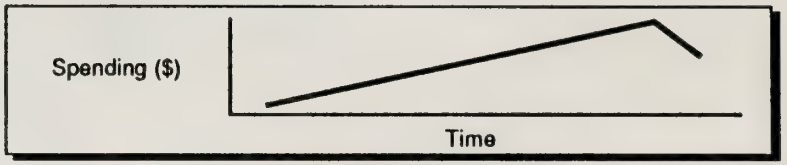
Processed Inputs -- Project Spending Curve Table

The Project Spending Curve Table includes two sub-tables:

- "Flat" spending sub-table: level spending over life of the project



- "Curved" spending sub-table: spending ramps up to a peak close to the end of the project, simulating phasing of large capital projects



- The Project Spending Curve Table is a flexible library of project spending profiles -- it can be expanded as further information on capital project spending patterns is gathered

Capital Program Statement

Processed Inputs -- Inflation Factor Table

- Inflation is assumed to be 3.5% per annum
- The Base Year is 1992 (the inflation Factor in 1992 is always 1)
- The inflation table is set up with an "Inflation Flag", which is a one-cell range named IFLAG
  - IFLAG is a value that functions as an on/off switch -- "0" is off, and "1" is on
  - The formulas that calculate the inflation factor for each year are set up as follows:

    Factor = Previous Year's Factor * (1 + (0.035 * IFLAG))

  - When IFLAG is "0", the Factor is always "1"
- On the Capital Program Statement (inflation is "built in" to the model at the summary level only), each year's spending in a cash flow is multiplied by that year's inflation Factor (some line items are excepted)
- When IFLAG is "1", all lines in the Capital Program Statement are inflated except Committed spending and the following catergories of Federal funding: Committed, Section 9, and Section 23 (these line items are not subject to inflation)
- The inflation table does not link to the Operating Statement; inflation is implicit in the revenue and cost growth rate forecasts

MBTA Module

Next Steps

- Training of EOTC and MBTA personnel on the model has been completed
- This is a "living" model
  - Needs constant refinement and updated data to improve the level of detail and sophistication
  - It should be modified as required
- The capital program should be looped back into the Recapitalization Estimate -- completion of major expansions over the next decade will substantially increase recapitalization requirements in the future
- More detailed analysis of the Operating Statement and the O & M impacts of completed capital projects may be required

MBTA Module

Complete Printout

MBTA Financial Model – Assumptions *DRAFT*

16–Jun–92 08:27

A. Operating Data

SOURCES: Historical operating data from Maureen Burke (Treasury). Projected operating data for FY 92 and FY 93 from Bobby Kuo.

1. Sources of Funds – Assumptions

- In general, sources of funds were projected using their average annual growth rates over the period FY 86 through FY 93.
- Inflation rates will remain generally similar to those experienced during the period FY 86 through FY 93.
- Ridership will gradually increase during the '90s due to traffic congestion attendant upon the CA/T project.
- The MBTA will not receive contract assistance for debt service beginning FY 93. The debt will either be refunded or served by another entity.
- Federal operating assistance will remain flat.

2. Uses of Funds – Assumptions

- In general, uses of funds were projected using their average annual growth rates over the period FY 86 through FY 93.
- Inflation rates will remain generally similar to those experienced during the period FY 86 through FY 93.
- The MBTA will not expend operating funds for debt service beginning FY 93. The debt will either be refunded or served by another entity.
- The MBTA will go to "forward funding" in FY 93.
- Lease payments will be counted as an operating expense starting FY 93.

B. Capital Program

SOURCES: Committed capital spending, Five Year Plan data, capital reimbursement assumptions and data from Jim Scanlin and Peter Butler.
Recapitalization estimate vehicle assumptions and data from Tom Furmaniak and Jim Monahan.
Recapitalization estimate plant assumptions and data from Bobby Kuo's life cycle model.

1. The MBTA arrived at committed capital spending (broken into local and Federal components) by checking unexpended, committed fund balances, listing the projects involved, and projecting spendout to complete the committed projects.

2. Federal funding assumptions

- 50% Federal funding for full build of Old Colony ($560 million total cost), no STP funding
- 80% Federal funding for full build of South Boston Transitway ($522.8 million total cost)
- Federal reimbursement flow will track with project spending cash flow

3. Curve Codes (see attached page for spending curve table):

- Code 1 through 10: flat spending, 1 yr. through 10 yr. periods
- Code 11 through 20: curved spending, 1 yr. through 10 yr. periods
- Code "M": manually entered cash flow

4. Recapitalization estimate:

- Replacement spending pattern is curved, overhaul spending pattern is flat
- Overhaul cost=50% of replacement cost
- 25 year life on all subway light/heavy rail cars; Red/Green receive 1 mid–life overhaul
- Orange/Blue vehicles receive rehabilitation on an as needed basis over last 10 years of useful life; no fleet mid–life overhaul contemplated
- 18 locomotives have 30 year life; first 10–year overhaul completed, 1 remaining at 20 year mark
- 25 locomotives have 30 year life; 2 overhauls at 10 year intervals
- 9 remanufactured locomotives have 20 year life; 1 mid–life overhaul
- Coaches have 25 year life; 1 mid–life overhaul
- Existing plant recapitalization requirements estimated on an annual basis, based on B. Kuo's life cycle model
- New plant recapitalization requirements have not been estimated

MBTA Cash Flow Summary

16-Jun-92 08:36

DRAFT

Baseline Scenario Assumptions

1. O & M Impact Scenario: (1) Base Case Toggle: 1
2. MITA refunds all long term debt in FY 93; MBTA goes to "forward funding" in FY 93.

Inflated $ in Millions	Historical Data						Projected Data										
	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
OPERATIONS (Nominal $)																	
Source of Funds																	
Local																	
Fares	104.8	108.6	112.2	114.5	127.5	123.4	132.4	138.3	144.0	149.9	156.1	162.6	169.3	176.2	183.5	191.1	198.9
Local Property Tax Assessment	107.5	110.2	112.9	115.7	118.6	121.6	124.6	127.8	131.0	134.2	137.6	141.0	144.6	148.2	151.9	155.7	159.6
Intra-Agency Transfers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Operating Income	11.2	9.4	12.6	5.4	11.1	5.4	3.5	3.2	3.1	2.9	2.8	2.7	2.6	2.5	2.4	2.3	2.2
Other Operating Revenue	7.2	6.0	7.2	7.3	10.9	12.0	12.5	13.0	14.3	15.8	17.5	19.3	21.3	23.5	25.9	28.6	31.6
Completed Projects - Revenues	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	20.3	38.8	40.8	42.9	45.1
Subtotal Local Funds	230.7	234.1	245.0	243.0	268.1	262.4	273.0	282.3	292.4	302.9	314.0	330.1	358.0	389.2	404.5	420.6	437.4
State																	
MTA Debt (Contract Assistance)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MBTA Bonds (Contract Assistance)	62.3	66.9	76.1	86.6	102.3	121.1	146.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Railroad (Contract Assistance)	8.7	9.6	10.6	9.0	9.4	12.7	12.9	13.3	14.2	15.3	16.3	17.5	18.8	20.1	21.5	23.0	24.7
Operating Reimbursement	145.2	161.4	182.7	215.6	228.4	271.1	287.3										
Subtotal State Funds	219.2	240.9	272.4	314.3	343.1	408.0	449.5	13.3	14.2	15.3	16.3	17.5	18.8	20.1	21.5	23.0	24.7
Federal																	
Section 9 (Operating)	20.9	20.6	17.9	18.6	18.4	18.1	18.0	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9
Subtotal Federal Funds	20.9	20.6	17.9	18.6	18.4	18.1	18.0	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9	17.9
Total Sources of Funds	470.8	495.7	535.3	575.9	629.6	688.5	740.5	313.5	324.5	336.1	348.3	365.5	394.7	427.2	443.9	461.5	480.0
Use of Funds																	
Operating Expenses																	
Wages & Fringe	245.1	261.9	277.6	304.0	322.0	343.1	352.9	356.9	376.7	397.6	419.7	443.0	467.5	493.5	520.9	549.8	580.3
Materials	50.3	56.6	60.9	59.4	65.5	68.4	69.7	70.3	73.8	77.5	81.4	85.5	89.8	94.4	99.1	104.1	109.3
Fuel	19.0	16.1	17.2	15.5	18.5	20.0	19.6	19.3	19.4	19.6	19.7	19.9	20.1	20.2	20.4	20.5	20.7
Commuter Rail Subsidy	53.0	54.3	57.2	50.5	55.2	59.8	61.7	60.0	61.2	62.5	63.7	65.0	66.3	67.7	69.0	70.4	71.8
Completed Projects - Expenses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	15.2	64.6	115.5	121.5	127.7	134.3
Other Operating Expenses	12.2	15.1	19.3	26.8	26.0	27.6	28.4	29.6	33.9	38.7	44.3	50.6	57.9	66.2	75.8	86.6	99.1
Subtotal Operating Expenses	379.6	403.9	432.1	456.2	487.4	519.1	532.3	536.1	565.1	595.9	630.3	679.2	766.3	857.5	906.6	959.2	1,015.5
Interest on Unfunded Debt	13.3	8.5	11.1	14.7	18.6	20.5	19.5	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Existing Debt Service	77.9	83.3	92.1	104.9	123.7	148.9	188.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lease Payments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Total Use of Funds	470.8	495.7	535.3	575.9	629.6	688.5	740.5	550.1	577.1	607.9	642.3	691.2	778.3	869.5	918.6	971.2	1,027.5
Net Operating Surplus (Deficit)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(236.6)	(252.5)	(271.8)	(294.1)	(325.7)	(383.6)	(442.3)	(474.7)	(509.7)	(547.5)
Cumulative Operating Surplus (Deficit)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(236.6)	(489.1)	(760.9)	(1,055.0)	(1,380.7)	(1,764.3)	(2,206.6)	(2,681.3)	(3,191.0)	(3,738.5)
Transfers To Capital Program	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MBTA Cash Flow Summary

16-Jun-92 08:36

Baseline Scenario Assumptions

1. O & M Impact Scenario: (1) Base Case Toggle: 1
2. MITA refunds all long term debt in FY 93; MBTA goes to "forward funding" in FY 93.

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Inflated $ in Millions	Historical Data						Projected Data										
	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
CAPITAL PROGRAM (All Projects)																	
Source of Funds																	
Transfer from Operations																	
Local																	
.																	
.																	
Subtotal Local Funds							0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
State																	
.																	
.																	
Subtotal State Funds							0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Federal																	
Committed							105.9	103.0	57.5	24.8	6.8	0.0	0.0	0.0	0.0	0.0	0.0
New Section 3							0.0	39.6	97.4	142.9	161.7	148.1	39.8	3.1	15.8	34.9	45.1
New Section 9							3.5	17.5	31.5	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Section 23 (remainder)							0.0	3.4	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Federal Funds							109.4	163.5	189.8	202.7	203.5	183.1	74.8	38.1	50.8	69.9	80.1
Proceeds from Financing																	
Total Source of Funds							109.4	163.5	189.8	202.7	203.5	183.1	74.8	38.1	50.8	69.9	80.1
Use of Funds																	
Committed Projects							362.9	263.4	171.6	50.5	8.2	0.0	0.0	0.0	0.0	0.0	0.0
1 Five Year Plan Recapitalization							0.0	156.1	187.4	212.3	228.7	110.4	15.0	15.5	0.0	0.0	0.0
Recapitalization Estimate							0.0	0.0	0.0	7.0	21.7	289.6	352.0	324.3	335.7	352.3	318.8
2 Accessibility							0.0	31.1	49.5	69.2	86.5	147.5	72.7	13.2	13.7	14.2	14.7
3 Enhancements							0.0	76.2	162.3	209.0	223.1	185.4	154.9	86.6	0.0	0.0	0.0
4 Expansion							0.0	107.1	350.1	543.8	503.2	411.7	199.4	57.3	19.8	43.6	56.4
Total Use of Funds							362.9	633.9	921.0	1,091.8	1,071.3	1,144.5	794.0	496.9	369.1	410.1	389.9
Net Capital Surplus (Deficit)							(253.5)	(470.5)	(731.2)	(889.0)	(867.8)	(961.4)	(719.2)	(458.9)	(318.3)	(340.2)	(309.8)
Cumulative Capital Surplus (Deficit)							(253.5)	(724.0)	(1,455.1)	(2,344.2)	(3,212.0)	(4,173.4)	(4,892.7)	(5,351.5)	(5,669.8)	(6,010.0)	(6,319.8)
Net Combined Surplus (Deficit)																	
Cumulative Combined Surplus (Deficit)																	

MBTA Cash Flow Summary

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Baseline Scenario Assumptions			
1. O & M Impact Scenario:	(1) Base Case	Toggle:	1
2. MITA refunds all long term debt in FY 93; MBTA goes to 'forward funding' in FY 93.			

Inflated $ in Millions	Historical Data						Projected Data										
	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
CAPITAL PROGRAM (Base Case)																	
Source of Funds																	
State																	
Bond Funds							253.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal State Funds							253.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Federal																	
Committed							105.9	103.0	57.5	24.8	6.8	0.0	0.0	0.0	0.0	0.0	0.0
New Section 3							0.0	39.6	97.4	142.9	161.7	148.1	39.8	3.1	15.8	34.9	45.1
New Section 9							3.5	17.5	31.5	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Section 23 (remainder)							0.0	3.4	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Federal Funds							109.4	163.5	189.8	202.7	203.5	183.1	74.8	38.1	50.8	69.9	80.1
Proceeds from Financing																	
Total Source of Funds							362.9	163.5	189.8	202.7	203.5	183.1	74.8	38.1	50.8	69.9	80.1
Use of Funds																	
Committed Projects							362.9	263.4	171.6	50.5	8.2	0.0	0.0	0.0	0.0	0.0	0.0
1 Five Year Plan Recapitalization							0.0	156.1	187.4	212.3	228.7	110.4	15.0	15.5	0.0	0.0	0.0
Recapitalization Estimate							0.0	0.0	0.0	7.0	21.7	289.6	352.0	324.3	335.7	352.3	318.8
2 Accessibility							0.0	31.1	49.5	69.2	86.5	147.5	72.7	13.2	13.7	14.2	14.7
3 Enhancements (SIP only)							0.0	59.5	140.4	176.4	182.1	131.9	71.9	43.6	0.0	0.0	0.0
4 Expansion (SIP only)							0.0	72.8	254.7	421.6	393.7	327.4	96.1	3.8	19.8	43.6	56.4
Total Use of Funds							362.9	583.0	803.6	936.9	920.8	1,006.8	607.8	400.5	369.1	410.1	389.9
Net Capital Surplus (Deficit)							0.0	(419.6)	(613.9)	(734.2)	(717.4)	(823.7)	(533.0)	(362.5)	(318.3)	(340.2)	(309.8)
Cumulative Capital Surplus (Deficit)							0.0	(419.6)	(1,033.4)	(1,767.6)	(2,485.0)	(3,308.7)	(3,841.7)	(4,204.2)	(4,522.5)	(4,862.7)	(5,172.4)
Net Combined Surplus (Deficit)																	
Cumulative Combined Surplus (Deficit)																	

MBTA Capital Program

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Sources: J. Scanlan, P. Butler
Note: Spending includes Federal reimbursement

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(1992 $ in Millions) Project Name	ID #	Category	Total Cost	Proj Start Date (FY)	Duration (Yrs)	Cost Remaining	Years Remaining	Curve Code
COMMITTED SPENDING								
FIVE YEAR PLAN PROJECTS								
Commuter Rail Infrastructure	1	1	159.0	1993	5	159.0	5	5
Boston Engine Terminal	2	1	150.0	1993	5	150.0	5	15
Fare Collection Equipment/Stations	3	1	100.0	1993	5	100.0	5	15
Red Line Infrastructure	4	1	60.0	1993	3	60.0	3	13
New Police Station	5	1	10.0	1993	2	10.0	2	2
Bus Procurement*	6	1	25.0	Yrly (thru 96)	5	100.0	4	NA
Bus Rehabilitation	7	1	30.0	1993	3	30.0	3	3
RIDE Van Procurement	8	1	1.1	Yrly (thru 96)	5	4.4	4	NA
Bus Maintenance Facility Renovations	9	1	3.0	1993	4	3.0	4	4
Blue/Orange Line Fleet Overhauls	10	1	85.5	1993	7	85.5	7	7
Green Line Infrastructure	11	1	47.0	1993	5	47.0	5	5
Info System Svcs Program	12	1	5.0	Yrly (thru 96)	5	20.0	4	NA
Non-Revenue Equipment	13	1	5.0	Yrly (thru 96)	5	20.0	4	NA
Red Line Noise Barrier Program	13.1	1	10.0	1993	5	10.0	5	5
Red Line Parking Garage Rehab	20	2	7.0	1993	2	7.0	2	2
Environmental Projects	23	2	3.0	Yrly (thru 96)	5	12.0	4	NA
Power/Communications	14	1	4.0	Yrly (thru 96)	5	16.0	4	NA
CATEGORY 1 SUBTOTAL			704.6			833.9		
ADA Key Station Plan	15	2	156.0	1993	15	156.0	15	M
Green Line Vehicle Procurement	16	2	325.0	1993	6	325.0	6	16
State Accessibility (AAB) Compliance	21	2	10.0	1993	3	10.0	3	3
CATEGORY 2 SUBTOTAL			491.0			491.0		
North Station Transportation Center	24	3	350.0	1993	7	225.0	7	17
South Station Bus Terminal/Track 12*	25	3	120.0	1993	4	100.0	4	14
Blue Line Station Mod/Access*	26	3	364.2	1993	6	364.2	6	M
Central Materials Warehouse	27	3	12.0	1993	3	12.0	3	3
South Boston Power Plant	29	3	3.0	1993	3	3.0	3	13
Parking/Station Improvements (CR/RT)*	31	3	240.0	1993	7	240.0	7	7
Commuter Boat Terminals*	32	3	6.0	1993	3	6.0	3	3
Mini Station Mod Program	33	3	2.0	Yrly (thru 96)	5	8.0	4	NA
CATEGORY 3 SUBTOTAL			1,097.2			958.2		
CATEGORY 3 SIP Commitments Subtotal			730.2			710.2		
Old Colony* (see also Note 1)	34	4	560.0	1993	6	545.0	6	M
South Boston Transitway (MOS)*	35.1	4	348.0	1993	6	342.0	5	M
South Boston Transitway (Extension)*	35.2	4	194.0	1999	7	194.0	7	M
Worcester CR Extension*	36	4	80.0	1993	5	80.0	5	15
New Bedford/Fall River CR Extension	37	4	280.0	1993	7	280.0	7	17
Foxboro CR Extension	38	4	10.0	1993	3	10.0	3	3
Saxonville CR Extension	39	4	25.0	1993	4	25.0	4	14
Milford/Bellingham CR Extension	40	4	30.0	1993	5	30.0	5	15
Newburyport Restoration*	41	4	42.0	1993	4	42.0	4	14
Arborway Restoration*	42	4	14.0	1993	3	14.0	3	3
Lechmere Station Relocation*	43	4	50.0	1993	6	50.0	6	16
Washington St. Replacement (Phase 1)*	44	4	40.0	1993	6	40.0	6	16
Arborway Maintenance Facility	45	4	110.0	1993	4	110.0	4	14
Blue Line Fleet Expansion	46	4	69.7	1993	5	69.7	5	15
Orange Line Fleet Expansion*	47	4	114.5	1993	5	114.5	5	15
Red Line Fleet Expansion*	48	4	104.9	1994	3	104.9	3	M
Circumferential (Feasibility, AA/DEIS)*	49	4	3.0	1994	2	3.0	2	2
Circumferential Biomedical Line	49.1	4	2,000.0	HOLD	10	2,000.0	10	20
Blue/Red Connector (Phase 1)*	50	4	50.0	1993	5	50.0	5	15
CATEGORY 4 SUBTOTAL			4,125.1			4,104.1		
CATEGORY 4 SIP Commitments Subtotal			3,600.4			3,579.4		
GRAND TOTAL CAPITAL SPENDING			6,417.9			6,387.2		

*SIP Commitments

Note 1: Old Colony project cost assumes full build of all 3 lines.

MBTA Capital Program

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(1992 $ in Millions) 'roject Name	ID #	Projected Total Spending									
		FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01
COMMITTED SPENDING		362.9	263.4	171.6	50.5	8.2	0.0	0.0	0.0	0.0	0.0
FIVE YEAR PLAN PROJECTS											
Commuter Rail Infrastructure	1		31.8	31.8	31.8	31.8	31.8	0.0	0.0	0.0	0.0
Boston Engine Terminal	2		7.5	22.5	37.5	60.0	22.5	0.0	0.0	0.0	0.0
Fare Collection Equipment/Stations	3		5.0	15.0	25.0	40.0	15.0	0.0	0.0	0.0	0.0
Red Line Infrastructure	4		20.4	19.8	19.8	0.0	0.0	0.0	0.0	0.0	0.0
New Police Station	5		5.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bus Procurement*	6		25.0	25.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0
Bus Rehabilitation	7		10.2	9.9	9.9	0.0	0.0	0.0	0.0	0.0	0.0
RIDE Van Procurement	8		1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
Bus Maintenance Facility Renovations	9		0.8	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0
Blue/Orange Line Fleet Overhauls	10		12.2	12.2	12.2	12.2	12.2	12.2	12.2	0.0	0.0
Green Line Infrastructure	11		9.4	9.4	9.4	9.4	9.4	0.0	0.0	0.0	0.0
Info System Svcs Program	12		5.0	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0
Non-Revenue Equipment	13		5.0	5.0	5.0	5.0	0.0	0.0	0.0	0.0	0.0
Red Line Noise Barrier Program	13.1		2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0
Red Line Parking Garage Rehab	20		3.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Environmental Projects	23		3.0	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0
Power/Communications	14		4.0	4.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 1 SUBTOTAL			150.9	175.0	191.5	199.3	92.9	12.2	12.2	0.0	0.0
ADA Key Station Plan	15		10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4
Green Line Vehicle Procurement	16		16.3	32.5	48.8	65.0	113.8	48.8	0.0	0.0	0.0
State Accessibility (AAB) Compliance	21		3.4	3.3	3.3	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 2 SUBTOTAL			30.1	46.2	62.5	75.4	124.2	59.2	10.4	10.4	10.4
North Station Transportation Center	24		9.0	13.5	22.5	33.8	45.0	67.5	33.8	0.0	0.0
South Station Bus Terminal/Track 12*	25		10.0	40.0	40.0	10.0	0.0	0.0	0.0	0.0	0.0
Blue Line Station Mod/Access*	26		11.2	54.8	82.8	114.4	76.8	24.2	0.0	0.0	0.0
Central Materials Warehouse	27		4.1	4.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
South Boston Power Plant	29		1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Parking/Station Improvements (CR/RT)*	31		34.3	34.3	34.3	34.3	34.3	34.3	34.3	0.0	0.0
Commuter Boat Terminals*	32		2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Mini Station Mod Program	33		2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 3 SUBTOTAL			73.6	151.5	188.5	194.4	156.1	126.0	68.0	0.0	0.0
CATEGORY 3 SIP Commitments Subtotal			57.5	131.1	159.1	158.7	111.1	58.5	34.3	0.0	0.0
Old Colony* (see also Note 1)	34		24.9	92.0	114.5	111.1	137.8	64.7	0.0	0.0	0.0
South Boston Transitway (MOS)*	35.1		19.8	56.2	89.6	106.7	69.7	0.0	0.0	0.0	0.0
South Boston Transitway (Extension)*	35.2		0.0	0.0	0.0	0.0	0.0	0.0	3.0	15.0	32.0
Worcester CR Extension*	36		4.0	12.0	20.0	32.0	12.0	0.0	0.0	0.0	0.0
New Bedford/Fall River CR Extension	37		11.2	16.8	28.0	42.0	56.0	84.0	42.0	0.0	0.0
Foxboro CR Extension	38		3.4	3.3	3.3	0.0	0.0	0.0	0.0	0.0	0.0
Saxonville CR Extension	39		2.5	10.0	10.0	2.5	0.0	0.0	0.0	0.0	0.0
Milford/Bellingham CR Extension	40		1.5	4.5	7.5	12.0	4.5	0.0	0.0	0.0	0.0
Newburyport Restoration*	41		4.2	16.8	16.8	4.2	0.0	0.0	0.0	0.0	0.0
Arborway Restoration*	42		4.8	4.6	4.6	0.0	0.0	0.0	0.0	0.0	0.0
Lechmere Station Relocation*	43		2.5	5.0	7.5	10.0	17.5	7.5	0.0	0.0	0.0
Washington St. Replacement (Phase 1)*	44		2.0	4.0	6.0	8.0	14.0	6.0	0.0	0.0	0.0
Arborway Maintenance Facility	45		11.0	44.0	44.0	11.0	0.0	0.0	0.0	0.0	0.0
Blue Line Fleet Expansion	46		3.5	10.5	17.4	27.9	10.5	0.0	0.0	0.0	0.0
Orange Line Fleet Expansion*	47		5.7	17.2	28.6	45.8	17.2	0.0	0.0	0.0	0.0
Red Line Fleet Expansion*	48		0.0	21.0	78.6	5.3	0.0	0.0	0.0	0.0	0.0
Circumferential (Feasibility, AA/DEIS)*	49		0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0
Circumferential Biomedical Line	49.1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue/Red Connector (Phase 1)*	50		2.5	7.5	12.5	20.0	7.5	0.0	0.0	0.0	0.0
CATEGORY 4 SUBTOTAL			103.5	326.9	490.5	438.5	346.6	162.2	45.0	15.0	32.0
CATEGORY 4 SIP Commitments Subtotal			70.4	237.8	380.2	343.1	275.7	78.2	3.0	15.0	32.0
GRAND TOTAL CAPITAL SPENDING		362.9	621.4	871.1	983.4	915.8	719.8	359.6	135.7	25.4	42.4

*SIP Commitments

Note 1: Old Colony project cost assumes full build of all 3 lines.

MBTA Capital Program

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(1992 $ in Millions)		Projected Total Spending									
Project Name	ID #	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11
COMMITTED SPENDING		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FIVE YEAR PLAN PROJECTS											
Commuter Rail Infrastructure	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Boston Engine Terminal	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fare Collection Equipment/Stations	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Line Infrastructure	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Police Station	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bus Procurement*	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bus Rehabilitation	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RIDE Van Procurement	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bus Maintenance Facility Renovations	9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue/Orange Line Fleet Overhauls	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Line Infrastructure	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Info System Svcs Program	12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Revenue Equipment	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Line Noise Barrier Program	13.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Line Parking Garage Rehab	20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Environmental Projects	23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Power/Communications	14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 1 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ADA Key Station Plan	15	10.4	10.4	10.4	10.4	10.4	10.4	0.0	0.0	0.0	0.0
Green Line Vehicle Procurement	16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
State Accessibility (AAB) Compliance	21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 2 SUBTOTAL		10.4	10.4	10.4	10.4	10.4	10.4	0.0	0.0	0.0	0.0
North Station Transportation Center	24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Station Bus Terminal/Track 12*	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue Line Station Mod/Access*	26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Central Materials Warehouse	27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Boston Power Plant	29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parking/Station Improvements (CR/RT)*	31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commuter Boat Terminals*	32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mini Station Mod Program	33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 3 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 3 SIP Commitments Subtotal		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Old Colony* (see also Note 1)	34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Boston Transitway (MOS)*	35.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Boston Transitway (Extension)*	35.2	40.0	40.0	38.0	26.0	0.0	0.0	0.0	0.0	0.0	0.0
Worcester CR Extension*	36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Bedford/Fall River CR Extension	37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Foxboro CR Extension	38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saxonville CR Extension	39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Milford/Bellingham CR Extension	40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Newburyport Restoration*	41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arborway Restoration*	42	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lechmere Station Relocation*	43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Washington St. Replacement (Phase 1)*	44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arborway Maintenance Facility	45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue Line Fleet Expansion	46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Orange Line Fleet Expansion*	47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Line Fleet Expansion*	48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Circumferential (Feasibility, AA/DEIS)*	49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Circumferential Biomedical Line	49.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue/Red Connector (Phase 1)*	50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 4 SUBTOTAL		40.0	40.0	38.0	26.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 4 SIP Commitments Subtotal		40.0	40.0	38.0	26.0	0.0	0.0	0.0	0.0	0.0	0.0
GRAND TOTAL CAPITAL SPENDING		50.4	50.4	48.4	36.4	10.4	10.4	0.0	0.0	0.0	0.0

*SIP Commitments

Note 1: Old Colony project cost assumes full build of all 3 lines.

MBTA Capital Resources

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Sources: J. Scanlan, P. Butler

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(1992 $ in Millions) Program/Project Name	ID #	Total Cost	Fed Funding Level (%)	Federal Share	Start Date	Reimbursement Remaining	Years Remaining	Curve Code
FEDERAL:								
Committed Spending								
Section 9 (Capital)								
1992 application					1992	35.0	4	14
1993 application					1993	35.0	4	14
1994 application					1994	35.0	4	14
1995 application					1995	35.0	4	14
1996 application					1996	35.0	4	14
1997 application					1997	35.0	4	14
1998 application					1998	35.0	4	14
1999 application					1999	35.0	4	14
2000 application					2000	35.0	4	14
2001 application					2001	35.0	4	14
2002 application					2002	35.0	4	14
2003 application					2003	35.0	4	14
2004 application					2004	35.0	4	14
2005 application					2005	35.0	4	14
2006 application					2006	35.0	4	14
2007 application					2007	35.0	4	14
2008 application					2008	35.0	4	14
2009 application					2009	35.0	4	14
2010 application					2010	35.0	4	14
2011 application					2011	35.0	4	14
2012 application					2012	35.0	4	14
Section 9 (Capital) Subtotal						735.0		
Section 23 remainder					1993	6.7	2	2
Old Colony	34	560.0	50%	280.0	1993	272.5	6	M
South Boston Transitway (Full Build)	35	542.0	80%	433.6	1993	428.8	13	M
South Station Bus Terminal	25	120.0	8%	10.0	1993	10.0	1	1
Section 3 Subtotal				723.6		711.3		
FEDERAL SUBTOTAL						1,453.0		
GRAND TOTAL						1,453.0		



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(1992 $ in Millions) Program/Project Name	ID #	Projected Reimbursement FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01
FEDERAL:											
Committed Spending		105.9	103.0	57.5	24.8	6.8	0.0	0.0	0.0	0.0	0.0
Section 9 (Capital)											
1992 application		3.5	14.0	14.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
1993 application		0.0	3.5	14.0	14.0	3.5	0.0	0.0	0.0	0.0	0.0
1994 application		0.0	0.0	3.5	14.0	14.0	3.5	0.0	0.0	0.0	0.0
1995 application		0.0	0.0	0.0	3.5	14.0	14.0	3.5	0.0	0.0	0.0
1996 application		0.0	0.0	0.0	0.0	3.5	14.0	14.0	3.5	0.0	0.0
1997 application		0.0	0.0	0.0	0.0	0.0	3.5	14.0	14.0	3.5	0.0
1998 application		0.0	0.0	0.0	0.0	0.0	0.0	3.5	14.0	14.0	3.5
1999 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	14.0	14.0
2000 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	14.0
2001 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5
2002 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2005 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2006 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2011 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2012 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Section 9 (Capital) Subtotal		3.5	17.5	31.5	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Section 23 remainder		0.0	3.4	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Old Colony	34	0.0	12.5	46.0	57.3	55.6	68.9	32.4	0.0	0.0	0.0
South Boston Transitway (Full Build)	35	0.0	15.8	45.0	71.7	85.4	55.8	0.0	2.4	12.0	25.6
South Station Bus Terminal	25	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Section 3 Subtotal		0.0	38.3	91.0	128.9	140.9	124.7	32.4	2.4	12.0	25.6
FEDERAL SUBTOTAL		109.4	162.1	183.3	188.7	182.7	159.7	67.4	37.4	47.0	60.6
GRAND TOTAL		109.4	162.1	183.3	188.7	182.7	159.7	67.4	37.4	47.0	60.6

MBTA Capital Resources

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(1992 $ in Millions) Program/Project Name	ID #	Projected Reimbursement FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11
FEDERAL:											
Committed Spending		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Section 9 (Capital)											
1992 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999 application		3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000 application		14.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001 application		14.0	14.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2002 application		3.5	14.0	14.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0
2003 application		0.0	3.5	14.0	14.0	3.5	0.0	0.0	0.0	0.0	0.0
2004 application		0.0	0.0	3.5	14.0	14.0	3.5	0.0	0.0	0.0	0.0
2005 application		0.0	0.0	0.0	3.5	14.0	14.0	3.5	0.0	0.0	0.0
2006 application		0.0	0.0	0.0	0.0	3.5	14.0	14.0	3.5	0.0	0.0
2007 application		0.0	0.0	0.0	0.0	0.0	3.5	14.0	14.0	3.5	0.0
2008 application		0.0	0.0	0.0	0.0	0.0	0.0	3.5	14.0	14.0	3.5
2009 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	14.0	14.0
2010 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	14.0
2011 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5
2012 application		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Section 9 (Capital) Subtotal		35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0
Section 23 remainder		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Old Colony	34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Boston Transitway (Full Build)	35	32.0	32.0	30.4	20.8	0.0	0.0	0.0	0.0	0.0	0.0
South Station Bus Terminal	25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Section 3 Subtotal		32.0	32.0	30.4	20.8	0.0	0.0	0.0	0.0	0.0	0.0
FEDERAL SUBTOTAL		67.0	67.0	65.4	55.8	35.0	35.0	35.0	35.0	35.0	35.0
GRAND TOTAL		67.0	67.0	65.4	55.8	35.0	35.0	35.0	35.0	35.0	35.0



MBTA Recapitalization Estimate

Sources: T. Furmaniak, B. Kuo, J. Scanlan, J. Monahan, P. Butler

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(1992 Dollars in Millions) Program/Project Name	Repl Cost	Repl Date	Repl Duration	Curve Code	Overhaul Cost	Overhaul Date	Overhaul Duration	Curve Code
VEHICLE RECAP								
Red Line (delivery date):								
86 car fleet (1994)	146.2	2019	5	15	73.1	2007	2	2
74 car fleet (1970)	125.8	1995	5	15	62.9	2008	2	2
58 car fleet (1989)	98.6	2014	5	15	49.3	2004	2	2
Orange Line (delivery date):								
120 car fleet (1980)	180.0	2005	5	15	Separate project in 5 Year Plan			
Blue Line (delivery date):								
70 car fleet (1981)	105.0	2006	5	15	Separate project in 5 Year Plan			
Green Line (delivery date):								
100 car fleet (1987)	170.0	2012	5	15	85.0	2000	2	2
100 car fleet (1995)	170.0	2020	5	15	85.0	2008	2	2
Commuter Rail (delivery date):								
18 locomotives (1978)	39.6	2008	3	13	19.8	1998	2	2
25 locomotives (1988)	55.0	2018	3	13	27.5	'98,'08	2	2
9 remfad locomotives (1991)	14.4	2011	2	12	7.2	2001	2	2
57 coaches (1978)	57.0	2003	4	14	DONE	DONE	DONE	DONE
67 coaches (1988)	67.0	2013	4	14	33.5	2003	2	2
40 coaches (1987)	40.0	2012	3	13	20.0	2002	2	2
107 coaches (1990)	107.0	2015	5	15	53.5	2005	2	2
5 double-deck coaches (1991)	105.0	2016	5	15	52.5	2006	2	2
Non-revenue light/heavy rail	3.0	Yrly						
Buses	25.0	Yrly						
Non-revenue vehicles	3.0	Yrly						
RIDE vans	1.0	Yrly						
VEHICLE SUBTOTAL	1,512.6				569.3			
EXISTING PLANT RECAP								
TRACK AND POWER	38.9	Yrly						
TUNNELS, VIADUCTS, BRIDGES	28.7	Yrly						
STATIONS AND PARKING	45.4	Yrly						
SIGNALS/COMMUNICATIONS	36.6	Yrly						
GARAGE/CARHOUSES	17.5	Yrly						
EQUIPMENT (less fare collection)	7.8	Yrly						
FARE COLLECTION EQUIPMENT	0.6	Yrly						
BUILDINGS	4.9	Yrly						
EXISTING PLANT SUBTOTAL	180.4							
NEW PLANT RECAP								
NEW PLANT SUBTOTAL								
GRAND TOTAL	1,693.0							

Note 1: Existing plant=built prior to FY 92, New plant=built during or after FY 92
Note 2: Boeing-Vertol Fleet excluded due to imminent replacement

MBTA Recapitalization Estimate

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(1992 Dollars in Millions) Program/Project Name	Projected Recapitalization Spending									
	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01
VEHICLE RECAP										
Red Line (delivery date):										
86 car fleet (1994)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
74 car fleet (1970)	0.0	0.0	0.0	6.3	18.9	31.5	50.3	18.9	0.0	0.0
58 car fleet (1989)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Orange Line (delivery date):										
120 car fleet (1980)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue Line (delivery date):										
70 car fleet (1981)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Line (delivery date):										
100 car fleet (1987)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.5	42.5
100 car fleet (1995)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commuter Rail (delivery date):										
18 locomotives (1978)	0.0	0.0	0.0	0.0	0.0	0.0	9.9	9.9	0.0	0.0
25 locomotives (1988)	0.0	0.0	0.0	0.0	0.0	0.0	13.8	13.8	0.0	0.0
9 remfad locomotives (1991)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6
57 coaches (1978)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67 coaches (1988)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40 coaches (1987)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
'07 coaches (1990)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
/5 double-deck coaches (1991)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-revenue light/heavy rail	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0
Buses	0.0	0.0	0.0	0.0	0.0	25.0	25.0	25.0	25.0	25.0
Non-revenue vehicles	0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0	3.0	3.0
RIDE vans	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0
VEHICLE SUBTOTAL	0.0	0.0	0.0	6.3	18.9	63.5	106.0	74.5	74.5	78.1
EXISTING PLANT RECAP										
TRACK AND POWER	0.0	0.0	0.0	0.0	0.0	38.9	38.9	38.9	38.9	38.9
TUNNELS, VIADUCTS, BRIDGES	0.0	0.0	0.0	0.0	0.0	28.7	28.7	28.7	28.7	28.7
STATIONS AND PARKING	0.0	0.0	0.0	0.0	0.0	45.4	45.4	45.4	45.4	45.4
SIGNALS/COMMUNICATIONS	0.0	0.0	0.0	0.0	0.0	36.6	36.6	36.6	36.6	36.6
GARAGE/CARHOUSES	0.0	0.0	0.0	0.0	0.0	17.5	17.5	17.5	17.5	17.5
EQUIPMENT (less fare collection)	0.0	0.0	0.0	0.0	0.0	7.8	7.8	7.8	7.8	7.8
FARE COLLECTION EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6
BUILDINGS	0.0	0.0	0.0	0.0	0.0	4.9	4.9	4.9	4.9	4.9
EXISTING PLANT SUBTOTAL	0.0	0.0	0.0	0.0	0.0	180.4	180.4	180.4	180.4	180.4
NEW PLANT RECAP										
NEW PLANT SUBTOTAL										
GRAND TOTAL	0.0	0.0	0.0	6.3	18.9	243.9	286.4	254.9	254.9	258.5

MBTA Recapitalization Estimate

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(1992 Dollars in Millions)	Projected Recapitalization Spending									
Program/Project Name	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11
VEHICLE RECAP										
Red Line (delivery date):										
36 car fleet (1994)	0.0	0.0	0.0	0.0	0.0	36.6	36.6	0.0	0.0	0.0
74 car fleet (1970)	0.0	0.0	0.0	0.0	0.0	0.0	31.5	31.5	0.0	0.0
58 car fleet (1989)	0.0	0.0	24.7	24.7	0.0	0.0	0.0	0.0	0.0	0.0
Orange Line (delivery date):										
120 car fleet (1980)	0.0	0.0	0.0	9.0	27.0	45.0	72.0	27.0	0.0	0.0
Blue Line (delivery date):										
70 car fleet (1981)	0.0	0.0	0.0	0.0	5.3	15.8	26.3	42.0	15.8	0.0
Green Line (delivery date):										
100 car fleet (1987)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100 car fleet (1995)	0.0	0.0	0.0	0.0	0.0	0.0	42.5	42.5	0.0	0.0
Commuter Rail (delivery date):										
18 locomotives (1978)	0.0	0.0	0.0	0.0	0.0	0.0	13.5	13.1	13.1	0.0
25 locomotives (1988)	0.0	0.0	0.0	0.0	0.0	0.0	13.8	13.8	0.0	0.0
9 remfad locomotives (1991)	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2
57 coaches (1978)	0.0	5.7	22.8	22.8	5.7	0.0	0.0	0.0	0.0	0.0
67 coaches (1988)	0.0	16.8	16.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40 coaches (1987)	10.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07 coaches (1990)	0.0	0.0	0.0	26.8	26.8	0.0	0.0	0.0	0.0	0.0
5 double-deck coaches (1991)	0.0	0.0	0.0	0.0	26.3	26.3	0.0	0.0	0.0	0.0
Non-revenue light/heavy rail	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Buses	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Non-revenue vehicles	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
RIDE vans	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
VEHICLE SUBTOTAL	45.6	64.5	96.2	115.2	123.0	155.6	268.0	201.8	60.8	39.2
EXISTING PLANT RECAP										
TRACK AND POWER	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9
TUNNELS, VIADUCTS, BRIDGES	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7	28.7
STATIONS AND PARKING	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4
SIGNALS/COMMUNICATIONS	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6
GARAGE/CARHOUSES	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
EQUIPMENT (less fare collection)	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
FARE COLLECTION EQUIPMENT	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
BUILDINGS	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
EXISTING PLANT SUBTOTAL	180.4	180.4	180.4	180.4	180.4	180.4	180.4	180.4	180.4	180.4
NEW PLANT RECAP										
NEW PLANT SUBTOTAL										
GRAND TOTAL	226.0	244.9	276.6	295.6	303.4	336.0	448.4	382.2	241.2	219.6

MBTA Capital Program – Operating Cost Impact

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Sources: J. Scanlan, P. Butler, T. Furmaniak, J. Monahan

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(1992 $ in Millions) Project Name	Service Unit Type	New Units Added	Cost per Unit	Net or Gross Cost?	Real Growth (per annum)	Proj Comp Date (FY)	Operating Start Date	Impact on Op Cost/Yr
FIVE YEAR PLAN PROJECTS								
Commuter Rail Infrastructure	Recap	0	NA	NA	NA	1997	1998	0.0
Boston Engine Terminal	Recap	0	NA	NA	NA	1997	1998	0.0
Fare Collection Equipment/Stations	Recap	0	NA	NA	NA	1997	1998	0.0
Red Line Infrastructure	Recap	0	NA	NA	NA	1995	1996	0.0
New Police Station	Recap	0	NA	NA	NA	1994	1995	0.0
Bus Procurement*	Recap	0	NA	NA	NA	Yrly		0.0
Bus Rehabilitation	Recap	0	NA	NA	NA	1995	1996	0.0
RIDE Van Procurement	Recap	0	NA	NA	NA	Yrly		0.0
Bus Maintenance Facility Renovations	Recap	0	NA	NA	NA	1996	1997	0.0
Blue/Orange Line Fleet Overhauls	Recap	0	NA	NA	NA	1999	2000	0.0
Green Line Infrastructure	Recap	0	NA	NA	NA	1997	1998	0.0
Info System Svcs Program	Recap	0	NA	NA	NA	Yrly		0.0
Non–Revenue Equipment	Recap	0	NA	NA	NA	Yrly		0.0
Red Line Noise Barrier Program	Recap	0	NA	NA	NA	1997	1998	0.0
Red Line Parking Garage Rehab	Recap	0	NA	NA	NA	1994	1995	0.0
Environmental Projects	Recap	0	NA	NA	NA	Yrly		0.0
Power/Communications	Recap	0	NA	NA	NA	Yrly		0.0
CATEGORY 1 SUBTOTAL								0.0
ADA Key Station Plan	Access	0	NA	NA	NA	2007	2008	0.0
Green Line Vehicle Procurement	Access	0	NA	NA	NA	1998	1999	0.0
State Accessibility (AAB) Compliance	Access	0	NA	NA	NA	1995	1996	0.0
CATEGORY 2 SUBTOTAL								0.0
North Station Transportation Center	New Plant	1	Contract	NA	NA	1999	2000	0.0
South Station Bus Terminal/Track 12*	New Plant	1	Contract	NA	NA	1996	1997	0.0
Blue Line Station Mod/Access*	Upgrade	0	NA	NA	NA	1998	1999	0.0
Central Materials Warehouse	Upgrade	0	NA	NA	NA	1995	1996	0.0
outh Boston Power Plant	Upgrade	0	NA	NA	NA	1995	1996	0.0
Parking/Station Improvements (CR/RT)*	Upgrade	0	NA	NA	NA	1999	2000	0.0
Commuter Boat Terminals*	Upgrade	0	NA	NA	NA	1995	1996	0.0
Mini Station Mod Program	Spaces	0	NA	NA	NA	Yrly		0.0
CATEGORY 3 SUBTOTAL								0.0
CATEGORY 3 SIP Commitments Subtotal								0.0
Old Colony* (see also Note 1)	Svc Miles	80.0	0.37	Gross	1.60%	1998	1999	29.4
South Boston Transitway (MOS)*	Svc Miles	1.5	14.71	Gross	1.60%	1997	1998	22.1
South Boston Transitway (Extension)*	Svc Miles					2005	2006	0.0
Worcester CR Extension*	Svc Miles	23.0	0.37	Gross	1.60%	1997	1998	8.4
New Bedford/Fall River CR Extension	Svc Miles	48.0	0.37	Gross	1.60%	1999	2000	17.6
Foxboro CR Extension	Svc Miles	5.0	0.37	Gross	1.60%	1995	1996	1.8
Saxonville CR Extension	Svc Miles	2.3	0.37	Gross	1.60%	1996	1997	0.8
Milford/Bellingham CR Extension	Svc Miles	6.0	0.37	Gross	1.60%	1997	1998	2.2
Newburyport Restoration*	Svc Miles	9.0	0.37	Gross	1.60%	1996	1997	3.3
Arborway Restoration*	Rehab	1.0	1.20	Net	1.60%	1995	1996	1.2
Lechmere Station Relocation*	Svc Miles	3.2	1.27	Gross	1.60%	1998	1999	4.1
Washington St. Replacement (Phase 1)*	Svc Miles	2.2				1998	1999	0.0
Arborway Maintenance Facility	Plant	1.0				1996	1997	0.0
Blue Line Fleet Expansion	Cars	28.0	0.14	Gross	1.60%	1997	1998	3.9
Orange Line Fleet Expansion*	Cars	46.0	0.12	Gross	1.60%	1997	1998	5.5
Red Line Fleet Expansion*	Cars	56.0	0.13	Gross	1.60%	1996	1997	7.3
Circumferential (Feasibility, AA/DEIS)*	None	0	NA	NA	NA	1995	1996	0.0
Circumferential Biomedical Line	Svc Miles	35.0	1.27	Gross	1.60%	HOLD		44.5
Blue/Red Connector (Phase 1)*	Svc Miles	0.0	5.75	Gross	1.60%	1997	1998	0.0
CATEGORY 4 SUBTOTAL								152.2
CATEGORY 4 SIP Commitments Subtotal								125.8
GRAND TOTAL (Base Case)								125.8
GRAND TOTAL ("Bare Bones")								125.8
GRAND TOTAL (All Projects)								152.2

MBTA Capital Program – Operating Cost Impact

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(1992 $ in Millions) roject Name	Service Unit Type	Projected Operating Costs FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01
FIVE YEAR PLAN PROJECTS											
Commuter Rail Infrastructure	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Boston Engine Terminal	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fare Collection Equipment/Stations	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Line Infrastructure	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Police Station	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bus Procurement*	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bus Rehabilitation	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RIDE Van Procurement	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bus Maintenance Facility Renovations	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue/Orange Line Fleet Overhauls	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Line Infrastructure	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Info System Svcs Program	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non–Revenue Equipment	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Line Noise Barrier Program	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Line Parking Garage Rehab	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Environmental Projects	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Power/Communications	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 1 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ADA Key Station Plan	Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Line Vehicle Procurement	Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
State Accessibility (AAB) Compliance	Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 2 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North Station Transportation Center	New Plant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Station Bus Terminal/Track 12*	New Plant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue Line Station Mod/Access*	Upgrade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Central Materials Warehouse	Upgrade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
outh Boston Power Plant	Upgrade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
arking/Station Improvements (CR/RT)*	Upgrade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commuter Boat Terminals*	Upgrade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mini Station Mod Program	Spaces	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 3 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 3 SIP Commitments Subtotal		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Old Colony* (see also Note 1)	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	32.8	33.3	33.9
South Boston Transitway (MOS)*	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	24.3	24.7	25.1	25.5
South Boston Transitway (Extension)*	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Worcester CR Extension*	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	9.3	9.4	9.6	9.7
New Bedford/Fall River CR Extension	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.3
Foxboro CR Extension	Svc Miles	0.0	0.0	0.0	0.0	2.0	2.0	2.0	2.1	2.1	2.1
Saxonville CR Extension	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	1.0	1.0
Milford/Bellingham CR Extension	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.5	2.5	2.5
Newburyport Restoration*	Svc Miles	0.0	0.0	0.0	0.0	0.0	3.6	3.6	3.7	3.8	3.8
Arborway Restoration*	Rehab	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.4	1.4
Lechmere Station Relocation*	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6	4.6	4.7
Washington St. Replacement (Phase 1)*	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arborway Maintenance Facility	Plant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue Line Fleet Expansion	Cars	0.0	0.0	0.0	0.0	0.0	0.0	4.3	4.4	4.5	4.5
Orange Line Fleet Expansion*	Cars	0.0	0.0	0.0	0.0	0.0	0.0	6.1	6.2	6.3	6.4
Red Line Fleet Expansion*	Cars	0.0	0.0	0.0	0.0	0.0	7.9	8.0	8.1	8.3	8.4
Circumferential (Feasibility, AA/DEIS)*	None	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Circumferential Biomedical Line	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue/Red Connector (Phase 1)*	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 4 SUBTOTAL		0.0	0.0	0.0	0.0	3.2	15.7	62.3	100.6	122.3	124.2
CATEGORY 4 SIP Commitments Subtotal		0.0	0.0	0.0	0.0	1.3	12.8	52.6	90.8	92.3	93.7
GRAND TOTAL (Base Case)		0.0	0.0	0.0	0.0	1.3	12.8	52.6	90.8	92.3	93.7
GRAND TOTAL ("Bare Bones")		0.0	0.0	0.0	0.0	1.3	12.8	52.6	90.8	92.3	93.7
GRAND TOTAL (All Projects)		0.0	0.0	0.0	0.0	3.2	15.7	62.3	100.6	122.3	124.2



MBTA Capital Program – Operating Cost Impact

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(1992 $ in Millions) Project Name	Service Unit Type	Projected Operating Costs									
		FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11
FIVE YEAR PLAN PROJECTS											
Commuter Rail Infrastructure	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Boston Engine Terminal	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fare Collection Equipment/Stations	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Line Infrastructure	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Police Station	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bus Procurement*	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bus Rehabilitation	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RIDE Van Procurement	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bus Maintenance Facility Renovations	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue/Orange Line Fleet Overhauls	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Line Infrastructure	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Info System Svcs Program	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Revenue Equipment	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Line Noise Barrier Program	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Line Parking Garage Rehab	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Environmental Projects	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Power/Communications	Recap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 1 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ADA Key Station Plan	Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Green Line Vehicle Procurement	Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
State Accessibility (AAB) Compliance	Access	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 2 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North Station Transportation Center	New Plant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Station Bus Terminal/Track 12*	New Plant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue Line Station Mod/Access*	Upgrade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Central Materials Warehouse	Upgrade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
South Boston Power Plant	Upgrade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parking/Station Improvements (CR/RT)*	Upgrade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commuter Boat Terminals*	Upgrade	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mini Station Mod Program	Spaces	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 3 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 3 SIP Commitments Subtotal		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Old Colony* (see also Note 1)	Svc Miles	34.4	35.0	35.5	36.1	36.7	37.3	37.9	38.5	39.1	39.7
South Boston Transitway (MOS)*	Svc Miles	25.9	26.3	26.7	27.1	27.6	28.0	28.4	28.9	29.4	29.8
South Boston Transitway (Extension)*	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Worcester CR Extension*	Svc Miles	9.9	10.1	10.2	10.4	10.5	10.7	10.9	11.1	11.2	11.4
New Bedford/Fall River CR Extension	Svc Miles	20.7	21.0	21.3	21.7	22.0	22.4	22.7	23.1	23.4	23.8
Foxboro CR Extension	Svc Miles	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.5
Saxonville CR Extension	Svc Miles	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1
Milford/Bellingham CR Extension	Svc Miles	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.9	2.9	3.0
Newburyport Restoration*	Svc Miles	3.9	3.9	4.0	4.1	4.1	4.2	4.3	4.3	4.4	4.5
Arborway Restoration*	Rehab	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6
Lechmere Station Relocation*	Svc Miles	4.8	4.8	4.9	5.0	5.1	5.2	5.3	5.3	5.4	5.5
Washington St. Replacement (Phase 1)*	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arborway Maintenance Facility	Plant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue Line Fleet Expansion	Cars	4.6	4.7	4.7	4.8	4.9	5.0	5.1	5.1	5.2	5.3
Orange Line Fleet Expansion*	Cars	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.5
Red Line Fleet Expansion*	Cars	8.5	8.7	8.8	8.9	9.1	9.2	9.4	9.5	9.7	9.8
Circumferential (Feasibility, AA/DEIS)*	None	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Circumferential Biomedical Line	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue/Red Connector (Phase 1)*	Svc Miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 4 SUBTOTAL		126.2	128.2	130.3	132.4	134.5	136.6	138.8	141.0	143.3	145.6
CATEGORY 4 SIP Commitments Subtotal		95.2	96.8	98.3	99.9	101.5	103.1	104.7	106.4	108.1	109.9
GRAND TOTAL (Base Case)		95.2	96.8	98.3	99.9	101.5	103.1	104.7	106.4	108.1	109.9
GRAND TOTAL ("Bare Bones")		95.2	96.8	98.3	99.9	101.5	103.1	104.7	106.4	108.1	109.9
GRAND TOTAL (All Projects)		126.2	128.2	130.3	132.4	134.5	136.6	138.8	141.0	143.3	145.6



MBTA Capital Program – Revenue Impact

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Sources: J. Scanlin, P. Butler, T. Furmaniak, J. Monahan

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(1992 $ in Millions) Project Name		New Units Added	Revenue per Unit	Cost per Unit	Recovery Ratio	Real Growth (per annum)
FIVE YEAR PLAN PROJECTS						
Commuter Rail Infrastructure		0.0	NA	NA	NA	
Boston Engine Terminal		0.0	NA	NA	NA	
Fare Collection Equipment/Stations		0.0	NA	NA	NA	
Red Line Infrastructure		0.0	NA	NA	NA	
New Police Station		0.0	NA	NA	NA	
Bus Procurement*		0.0	NA	NA	NA	
Bus Rehabilitation		0.0	NA	NA	NA	
RIDE Van Procurement		0.0	NA	NA	NA	
Bus Maintenance Facility Renovations		0.0	NA	NA	NA	
Blue/Orange Line Fleet Overhauls		0.0	NA	NA	NA	
Green Line Infrastructure		0.0	NA	NA	NA	
Info System Svcs Program		0.0	NA	NA	NA	
Non–Revenue Equipment		0.0	NA	NA	NA	
Red Line Noise Barrier Program		0.0	NA	NA	NA	
Red Line Parking Garage Rehab		0.0	NA	NA	NA	
Environmental Projects		0.0	NA	NA	NA	
Power/Communications		0.0	NA	NA	NA	
CATEGORY 1 SUBTOTAL						
ADA Key Station Plan						
Green Line Vehicle Procurement						
State Accessibility (AAB) Compliance						
CATEGORY 2 SUBTOTAL						
North Station Transportation Center						
South Station Bus Terminal/Track 12*						
Blue Line Station Mod/Access*						
Central Materials Warehouse						
South Boston Power Plant						
Parking/Station Improvements (CR/RT)*						
Commuter Boat Terminals*						
Mini Station Mod Program						
CATEGORY 3 SUBTOTAL						
CATEGORY 3 SIP Commitments Subtotal						
Old Colony* (see also Note 1)		80.0	0.15	0.37	41.77%	NA
South Boston Transitway (MOS)*		1.5	4.27	14.71	29.05%	NA
South Boston Transitway (Extension)*		0.0	0.00	0.00	29.05%	NA
Worcester CR Extension*		23.0	0.15	0.37	41.77%	NA
New Bedford/Fall River CR Extension		48.0	0.15	0.37	41.77%	NA
Foxboro CR Extension		5.0	0.15	0.37	41.77%	NA
Saxonville CR Extension		2.3	0.15	0.37	41.77%	NA
Milford/Bellingham CR Extension		6.0	0.15	0.37	41.77%	NA
Newburyport Restoration*		9.0	0.15	0.37	41.77%	NA
Arborway Restoration*		NA	NA	NA	NA	NA
Lechmere Station Relocation*		NA	NA	NA	NA	NA
Washington St. Replacement (Phase 1)*		2.2	0.00	0.00	29.05%	NA
Arborway Maintenance Facility		NA	NA	NA	NA	NA
Blue Line Fleet Expansion		28.0	0.04	0.14	29.05%	NA
Orange Line Fleet Expansion*		46.0	0.03	0.12	29.05%	NA
Red Line Fleet Expansion*		56.0	0.04	0.13	29.05%	NA
Circumferential (Feasibility, AA/DEIS)*		NA	NA	NA	NA	NA
Circumferential Biomedical Line		35.0	0.37	1.27	29.05%	NA
Blue/Red Connector (Phase 1)*		NA	NA	NA	NA	NA
CATEGORY 4 SUBTOTAL						
CATEGORY 4 SIP Commitments Subtotal						
GRAND TOTAL (Base Case)						
GRAND TOTAL ("Bare Bones")						
GRAND TOTAL (All Projects)						

MBTA Capital Program – Revenue Impact

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(1992 $ in Millions) Project Name		Projected Revenue									
		FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01
FIVE YEAR PLAN PROJECTS											
Commuter Rail Infrastructure											
Boston Engine Terminal											
Fare Collection Equipment/Stations											
Red Line Infrastructure											
New Police Station											
Bus Procurement*											
Bus Rehabilitation											
RIDE Van Procurement											
Bus Maintenance Facility Renovations											
Blue/Orange Line Fleet Overhauls											
Green Line Infrastructure											
Info System Svcs Program											
Non–Revenue Equipment											
Red Line Noise Barrier Program											
Red Line Parking Garage Rehab											
Environmental Projects											
Power/Communications											
CATEGORY 1 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ADA Key Station Plan											
Green Line Vehicle Procurement											
State Accessibility (AAB) Compliance											
CATEGORY 2 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North Station Transportation Center											
South Station Bus Terminal/Track 12*											
Blue Line Station Mod/Access*											
Central Materials Warehouse											
South Boston Power Plant											
Parking/Station Improvements (CR/RT)*											
Commuter Boat Terminals*											
Mini Station Mod Program											
CATEGORY 3 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 3 SIP Commitments Subtotal		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Old Colony* (see also Note 1)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.7	13.9	14.2
South Boston Transitway (MOS)*		0.0	0.0	0.0	0.0	0.0	0.0	7.1	7.2	7.3	7.4
South Boston Transitway (Extension)*		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Worcester CR Extension*		0.0	0.0	0.0	0.0	0.0	0.0	3.9	3.9	4.0	4.1
New Bedford/Fall River CR Extension		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.4	8.5
Foxboro CR Extension		0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.9	0.9	0.9
Saxonville CR Extension		0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4
Milford/Bellingham CR Extension		0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.1
Newburyport Restoration*		0.0	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.6	1.6
Arborway Restoration*		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lechmere Station Relocation*		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Washington St Replacement (Phase 1)*		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arborway Maintenance Facility		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue Line Fleet Expansion		0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3
Orange Line Fleet Expansion*		0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.8	1.8	1.8
Red Line Fleet Expansion*		0.0	0.0	0.0	0.0	0.0	2.3	2.3	2.4	2.4	2.4
Circumferential (Feasibility, AA/DEIS)*		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Circumferential Biomedical Line		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue/Red Connector (Phase 1)*		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 4 SUBTOTAL		0.0	0.0	0.0	0.0	0.8	5.0	20.0	34.1	43.0	43.7
CATEGORY 4 SIP Commitments Subtotal		0.0	0.0	0.0	0.0	0.0	3.8	16.5	30.5	31.0	31.5
GRAND TOTAL (Base Case)		0.0	0.0	0.0	0.0	0.0	3.8	16.5	30.5	31.0	31.5
GRAND TOTAL ("Bare Bones")		0.0	0.0	0.0	0.0	0.0	3.8	16.5	30.5	31.0	31.5
GRAND TOTAL (All Projects)		0.0	0.0	0.0	0.0	0.8	5.0	20.0	34.1	43.0	43.7

MBTA Capital Program – Revenue Impact

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(1992 $ in Millions) Project Name		Projected Revenue									
		FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11
FIVE YEAR PLAN PROJECTS											
Commuter Rail Infrastructure											
Boston Engine Terminal											
Fare Collection Equipment/Stations											
Red Line Infrastructure											
New Police Station											
Bus Procurement*											
Bus Rehabilitation											
RIDE Van Procurement											
Bus Maintenance Facility Renovations											
Blue/Orange Line Fleet Overhauls											
Green Line Infrastructure											
Info System Svcs Program											
Non–Revenue Equipment											
Red Line Noise Barrier Program											
Red Line Parking Garage Rehab											
Environmental Projects											
Power/Communications											
CATEGORY 1 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ADA Key Station Plan											
Green Line Vehicle Procurement											
State Accessibility (AAB) Compliance											
CATEGORY 2 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
North Station Transportation Center											
South Station Bus Terminal/Track 12*											
Blue Line Station Mod/Access*											
Central Materials Warehouse											
South Boston Power Plant											
Parking/Station Improvements (CR/RT)*											
Commuter Boat Terminals*											
Mini Station Mod Program											
CATEGORY 3 SUBTOTAL		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 3 SIP Commitments Subtotal		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Old Colony* (see also Note 1)		14.4	14.6	14.8	15.1	15.3	15.6	15.8	16.1	16.3	16.6
South Boston Transitway (MOS)*		7.5	7.6	7.8	7.9	8.0	8.1	8.3	8.4	8.5	8.7
South Boston Transitway (Extension)*		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Worcester CR Extension*		4.1	4.2	4.3	4.3	4.4	4.5	4.5	4.6	4.7	4.8
New Bedford/Fall River CR Extension		8.6	8.8	8.9	9.0	9.2	9.3	9.5	9.6	9.8	10.0
Foxboro CR Extension		0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0
Saxonville CR Extension		0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Milford/Bellingham CR Extension		1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2
Newburyport Restoration*		1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.9
Arborway Restoration*		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lechmere Station Relocation*		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Washington St. Replacement (Phase 1)*		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arborway Maintenance Facility		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue Line Fleet Expansion		1.3	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5
Orange Line Fleet Expansion*		1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.1	2.2
Red Line Fleet Expansion*		2.5	2.5	2.6	2.6	2.6	2.7	2.7	2.8	2.8	2.9
Circumferential (Feasibility, AA/DEIS)*		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Circumferential Biomedical Line		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Blue/Red Connector (Phase 1)*		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CATEGORY 4 SUBTOTAL		44.4	45.1	45.8	46.5	47.3	48.0	48.8	49.6	50.4	51.2
CATEGORY 4 SIP Commitments Subtotal		32.0	32.5	33.0	33.6	34.1	34.6	35.2	35.8	36.3	36.9
GRAND TOTAL (Base Case)		32.0	32.5	33.0	33.6	34.1	34.6	35.2	35.8	36.3	36.9
GRAND TOTAL ("Bare Bones")		32.0	32.5	33.0	33.6	34.1	34.6	35.2	35.8	36.3	36.9
GRAND TOTAL (All Projects)		44.4	45.1	45.8	46.5	47.3	48.0	48.8	49.6	50.4	51.2

Assumptions File

Complete Printout

EOTC Financial Model
Assumptions Worksheet

Inflation

Inflation Flag 1 (0=off,1=on)

	Historical Years				Base Year	Projected Years																	
1992 Base Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Capital																									
Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Factor	0.87	0.90	0.93	0.97	1.00	1.04	1.07	1.11	1.15	1.19	1.23	1.27	1.32	1.36	1.41	1.46	1.51	1.56	1.62	1.68	1.73	1.79	1.86	1.92	1.99
Operating																									
Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Factor	0.87	0.90	0.93	0.97	1.00	1.04	1.07	1.11	1.15	1.19	1.23	1.27	1.32	1.36	1.41	1.46	1.51	1.56	1.62	1.68	1.73	1.79	1.86	1.92	1.99

EOTC Financial Model
Assumptions Worksheet

MBTA Project Spending Curve Table

Note: Unshaded= flat spending, Shaded= curved spending

PROJECT DURATION	CURVE CODE	PROJECT YEAR 1	2	3	4	5	6	7	8	9	10	TOTAL
1	1	100%										100%
2	2	50%	50%									100%
3	3	34%	33%	33%								100%
4	4	25%	25%	25%	25%							100%
5	5	20%	20%	20%	20%	20%						100%
6	6	17%	17%	17%	17%	17%	17%					100%
7	7	14%	14%	14%	14%	14%	14%	14%				100%
8	8	13%	13%	13%	13%	13%	13%	13%	13%			100%
9	9	11%	11%	11%	11%	11%	11%	11%	11%	11%		100%
10	10	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	100%
1	11	100%										100%
2	12	50%	50%									100%
3	13	34%	33%	33%								100%
4	14	10%	40%	40%	10%							100%
5	15	5%	15%	25%	40%	15%						100%
6	16	5%	10%	15%	20%	35%	15%					100%
7	17	4%	6%	10%	15%	20%	30%	15%				100%
8	18	3%	5%	9%	12%	13%	18%	28%	12%			100%
9	19	2%	4%	8%	10%	11%	15%	18%	22%	10%		100%
10	20	1%	3%	7%	8%	10%	13%	15%	16%	19%	8%	100%

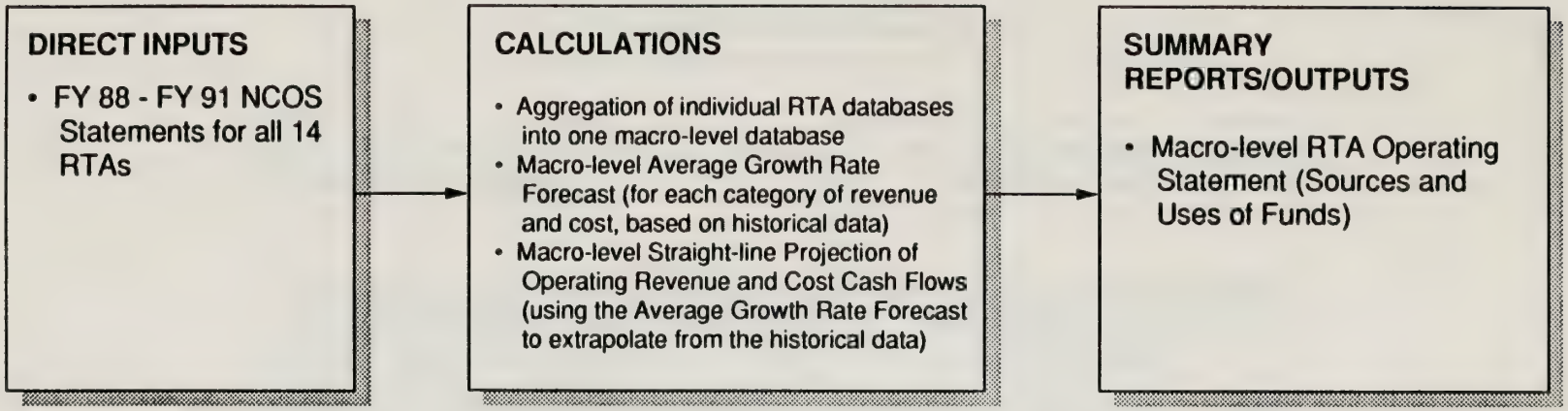
Commonwealth of Massachusetts, Executive Office of Transportation and Construction

RTA Financial Planning and Analysis Module

Documentation and User Training Package

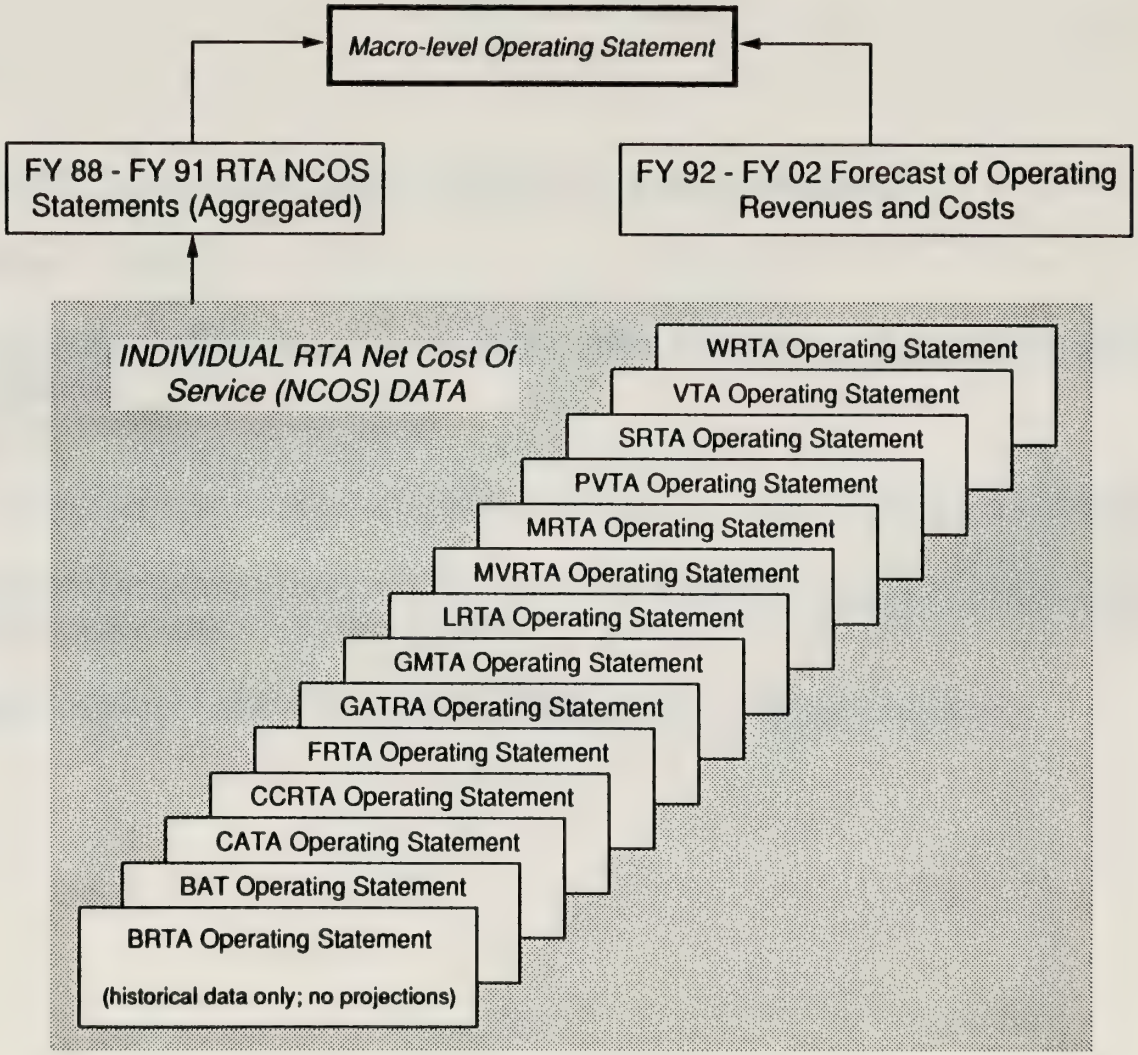
Deloitte & Touche

Functional Overview of the RTA Module



- Historical Net Cost of Service data were directly input to the "Sources and Uses of Funds" format
  - One sheet exists for each individual RTA, containing its individual data
  - The individual databases are aggregated into one macro-level RTA database
  - The macro-level database is the basis for the Average Growth Rate Forecast and the Straight-line Projection of Operating Revenue and Cost Cash Flows
  - The model does not perform projections for individual RTAs; this feature could be installed if required
- For each category of revenue and cost, nominal annual growth rates were calculated for the period FY 88 through FY 91
- These growth rates were averaged to form the basis for projecting future annual growth in each category
- Because the growth rates were calculated from nominal dollars, inflation is implicit in the projections
- The RTAs capital programs were not modeled
  - capital requirements and cash flows were estimated based on EOTC data and directly input to the Summary Module
  - O & M impacts of capital spending were not modeled

Operational Overview of the RTA Module



RTA Module

Next Steps

- Training of EOTC personnel on the model has been completed
- This is a "living" model
  - Needs constant refinement and updated data to improve the level of detail and sophistication
  - It should be modified as required
- The capital programs should be studied and incorporated directly into the model
- Once capital projects are identified, the O & M impacts of the projects should be studied and incorporated into the model
- More detailed analysis of the Operating Statements may be required

RTA Module

Complete Printout

RTA Cash Flow Summary

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Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			12.6	12.6	14.1	15.9	16.7	17.6	18.4	19.4	20.3	21.3	22.4	23.5	24.7	25.9
Local Property Tax Assessment			10.4	11.0	11.5	12.0	12.3	12.6	12.9	13.2	13.5	13.9	14.2	14.6	14.9	15.3
Intra-Agency Transfers																
Non-Operating Revenue			0.5	0.4	0.9	0.9	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.1	2.4
Other Operating Revenue			4.1	6.0	5.1	6.7	7.3	8.1	8.9	9.8	10.7	11.8	13.0	14.3	15.7	17.3
.																
Subtotal Local Funds	0.0	0.0	27.5	29.9	31.6	35.5	37.3	39.3	41.4	43.7	46.1	48.6	51.4	54.4	57.5	60.9
State																
.																
.																
.																
Operating Reimbursement			18.0	20.2	24.0	28.2										
Grants/Contract Assistance			1.0	2.1	1.7	3.2	3.5	3.8	4.2	4.6	5.1	5.6	6.2	6.8	7.4	8.2
Subtotal State Funds	0.0	0.0	19.0	22.3	25.7	31.4	3.5	3.8	4.2	4.6	5.1	5.6	6.2	6.8	7.4	8.2
Federal																
Section 9																
.																
Subtotal Federal Funds			11.6	12.3	11.7	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
Total Sources of Funds	0.0	0.0	58.2	64.6	69.0	76.7	50.7	53.0	55.5	58.1	61.0	64.1	67.4	71.0	74.8	79.0
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			56.8	62.4	66.2	72.7	77.8	83.2	89.0	95.3	101.9	109.1	116.7	124.9	133.6	142.9
.																
Existing Debt Service			1.4	2.2	2.8	4.1	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Debt Service																
Total Use of Funds	0.0	0.0	58.2	64.6	69.0	76.7	83.5	83.2	89.0	95.3	101.9	109.1	116.7	124.9	133.6	142.9
Net Operating Surplus (Deficit)	0.0	0.0	(0.0)	0.0	0.0	0.0	(32.9)	(30.2)	(33.5)	(37.1)	(40.9)	(45.0)	(49.3)	(53.9)	(58.8)	(64.0)
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

RTA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
CAPITAL PROGRAM																
Source of Funds																
Transfer from Operations																
Local																
.																
.																
Subtotal Local Funds																
State																
.																
.																
Subtotal State Funds																
Federal																
Section 3																
Section 9																
.																
.																
Subtotal Federal Funds																
Proceeds from Financing																
Total Source of Funds																
Use of Funds																
Committed Projects																
Vehicle Rehab. & Replacement																
Maintenance																
Regulatory																
Enhancements/Upgrades																
Expansion																
Total Use of Funds																
Net Capital Surplus (Deficit)																
Cumulative Capital Surplus (Deficit)																
Net Combined Surplus (Deficit)																
Cumulative Combined Surplus (Deficit)																

RTA Cash Flow Annual Change Rates

17-Jun-92 15:39

Baseline Scenario **Assumptions**

(Percentage Change of Inflated $)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares				0.2%	12.3%	12.6%	8.3%									
Local Property Tax Assessment				5.7%	4.7%	3.9%	4.8%									
Intra-Agency Transfers																
Non-Operating Revenue				-25.0%	150.1%	3.9%	43.0%									
Other Operating Revenue				47.1%	-14.9%	30.6%	20.9%									
.																
Subtotal Local Funds				8.8%	5.7%	12.1%	8.9%									
State																
.																
.																
.																
Operating Reimbursement				12.1%	18.8%	17.7%	16.2%									
Grants/Contract Assistance				104.5%	-19.5%	89.0%	58.0%									
Subtotal State Funds				17.0%	15.2%	22.3%	18.2%									
Federal																
Section 9																
.																
Subtotal Federal Funds				6.1%	-5.4%	-15.5%	-4.9%									
Total Sources of Funds				10.9%	6.8%	11.2%	9.7%									
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses				9.9%	6.1%	9.7%	8.6%									
.																
Existing Debt Service				52.9%	27.9%	47.0%	42.6%									
New Debt Service																
Total Use of Funds				10.9%	6.8%	11.2%	9.7%									
Net Operating Surplus (Deficit)																
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

BRTA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			0.72	0.72	0.82	0.88										
Local Property Tax Assessment			0.36	0.37	0.38	0.39										
Intra-Agency Transfers																
Non-Operating Revenue			0.04	0.03	0.05	0.00										
Other Operating Revenue			0.00	0.00	0.00	0.07										
.																
Subtotal Local Funds	0.00	0.00	1.12	1.13	1.25	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			0.45	0.50	0.63	0.85										
Grants/Contract Assistance			0.08	0.09	0.09	0.07										
Subtotal State Funds	0.00	0.00	0.53	0.59	0.71	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			0.47	0.73	0.58	0.42										
Total Sources of Funds	0.00	0.00	2.13	2.44	2.54	2.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			2.04	2.33	2.41	2.55										
.																
Existing Debt Service			0.08	0.11	0.13	0.15										
New Debt Service																
Total Use of Funds	0.00	0.00	2.13	2.44	2.54	2.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	(0.00)	0.00	0.00	(0.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

BAT Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			1.51	1.62	1.53	1.56										
Local Property Tax Assessment			1.27	1.30	1.33	1.33										
Intra-Agency Transfers																
Non-Operating Revenue			0.06	0.10	0.25	0.17										
Other Operating Revenue			0.78	0.79	0.91	0.92										
.																
Subtotal Local Funds	0.00	0.00	3.62	3.82	4.03	3.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			2.50	2.74	2.97	3.42										
Grants/Contract Assistance			0.02	0.04	0.05	0.05										
Subtotal State Funds	0.00	0.00	2.52	2.78	3.02	3.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			1.18	1.15	1.17	1.15										
Total Sources of Funds	0.00	0.00	7.32	7.75	8.21	8.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			7.09	7.63	8.10	8.49										
.																
Existing Debt Service			0.23	0.12	0.12	0.11										
New Debt Service																
Total Use of Funds	0.00	0.00	7.32	7.75	8.21	8.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

CATA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			0.05	0.05	0.06	0.06										
Local Property Tax Assessment			0.19	0.20	0.20	0.20										
Intra-Agency Transfers																
Non-Operating Revenue			0.00	0.00	0.00	0.00										
Other Operating Revenue			0.13	0.13	0.15	0.19										
.																
Subtotal Local Funds	0.00	0.00	0.37	0.38	0.41	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			0.30	0.43	0.56	0.60										
Grants/Contract Assistance			0.07	0.01	0.03	0.15										
Subtotal State Funds	0.00	0.00	0.37	0.44	0.59	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			0.07	0.12	0.07	0.06										
Total Sources of Funds	0.00	0.00	0.81	0.94	1.07	1.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			0.80	0.93	1.07	1.27										
.																
Existing Debt Service			0.01	0.00	0.00	0.00										
New Debt Service																
Total Use of Funds	0.00	0.00	0.81	0.94	1.07	1.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	0.00	0.00	0.00	(0.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

CCRTA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars In Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			0.12	0.14	1.05	1.04										
Local Property Tax Assessment			0.30	0.34	0.35	0.36										
Intra-Agency Transfers																
Non-Operating Revenue			0.04	0.00	0.11	0.07										
Other Operating Revenue			0.68	1.11	0.00	0.00										
.																
Subtotal Local Funds	0.00	0.00	1.14	1.59	1.51	1.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			0.39	0.49	0.69	0.74										
Grants/Contract Assistance			0.18	0.21	0.21	0.21										
Subtotal State Funds	0.00	0.00	0.58	0.70	0.89	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			0.23	0.23	0.23	0.18										
Total Sources of Funds	0.00	0.00	1.94	2.52	2.62	2.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			1.93	2.52	2.46	2.47										
.																
Existing Debt Service			0.01	0.00	0.16	0.13										
New Debt Service																
Total Use of Funds	0.00	0.00	1.94	2.52	2.62	2.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	0.00	0.00	(0.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

FRTA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			0.01	0.02	0.01	0.00										
Local Property Tax Assessment			0.06	0.07	0.07	0.07										
Intra-Agency Transfers																
Non-Operating Revenue			0.00	0.00	0.00	0.00										
Other Operating Revenue			0.17	0.21	0.21	0.19										
.																
Subtotal Local Funds	0.00	0.00	0.25	0.29	0.29	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			0.14	0.17	0.14	0.18										
Grants/Contract Assistance			0.04	0.10	0.04	0.14										
Subtotal State Funds	0.00	0.00	0.18	0.27	0.18	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			0.10	0.10	0.10	0.07										
Total Sources of Funds	0.00	0.00	0.53	0.66	0.56	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			0.48	0.55	0.53	0.53										
.																
Existing Debt Service			0.04	0.11	0.03	0.12										
New Debt Service																
Total Use of Funds	0.00	0.00	0.53	0.66	0.56	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	0.00	0.00	0.00	(0.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

GATRA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			0.21	0.22	0.24	0.26										
Local Property Tax Assessment			0.34	0.37	0.40	0.45										
Intra-Agency Transfers																
Non-Operating Revenue			0.07	0.10	0.08	0.08										
Other Operating Revenue			0.08	0.63	0.73	0.62										
.																
Subtotal Local Funds	0.00	0.00	0.71	1.32	1.45	1.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			0.57	0.67	0.79	0.86										
Grants/Contract Assistance			0.10	0.85	0.44	0.23										
Subtotal State Funds	0.00	0.00	0.67	1.52	1.23	1.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			0.73	0.78	0.93	0.88										
Total Sources of Funds	0.00	0.00	2.10	3.63	3.61	3.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			2.07	2.82	3.20	3.20										
.																
Existing Debt Service			0.04	0.81	0.41	0.18										
New Debt Service																
Total Use of Funds	0.00	0.00	2.10	3.63	3.61	3.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	0.00	0.00	(0.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																



LRTA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			0.61	0.58	0.49	0.42										
Local Property Tax Assessment			0.62	0.62	0.85	1.00										
Intra-Agency Transfers																
Non-Operating Revenue			0.00	0.00	0.00	0.17										
Other Operating Revenue			0.33	0.39	0.40	0.29										
.																
Subtotal Local Funds	0.00	0.00	1.56	1.59	1.74	1.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			0.59	0.62	0.84	1.27										
Grants/Contract Assistance			0.04	0.22	0.13	1.17										
Subtotal State Funds	0.00	0.00	0.63	0.84	0.97	2.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			0.94	0.98	0.96	0.98										
Total Sources of Funds	0.00	0.00	3.13	3.42	3.67	5.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			3.01	3.40	3.55	4.13										
.																
Existing Debt Service			0.12	0.02	0.11	1.17										
New Debt Service																
Total Use of Funds	0.00	0.00	3.13	3.42	3.67	5.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

MVRTA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			0.64	0.64	0.71	0.85										
Local Property Tax Assessment			0.75	0.81	0.87	0.96										
Intra-Agency Transfers																
Non-Operating Revenue			0.00	0.00	0.00	0.00										
Other Operating Revenue			0.01	0.01	0.30	1.02										
.																
Subtotal Local Funds	0.00	0.00	1.40	1.46	1.88	2.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			2.25	2.42	2.62	2.82										
Grants/Contract Assistance			0.24	0.28	0.21	0.27										
Subtotal State Funds	0.00	0.00	2.49	2.70	2.84	3.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			0.91	1.01	1.03	0.48										
Total Sources of Funds	0.00	0.00	4.80	5.16	5.75	6.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			4.68	5.06	5.54	6.31										
.																
Existing Debt Service			0.11	0.10	0.21	0.09										
New Debt Service																
Total Use of Funds	0.00	0.00	4.80	5.16	5.75	6.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

MRTA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			0.84	0.96	0.91	2.11										
Local Property Tax Assessment			0.73	0.73	0.76	0.79										
Intra-Agency Transfers																
Non-Operating Revenue			0.04	0.03	0.14	0.07										
Other Operating Revenue			0.76	0.38	0.36	0.35										
.																
Subtotal Local Funds	0.00	0.00	2.37	2.09	2.17	3.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			1.05	1.33	1.58	1.87										
Grants/Contract Assistance			0.11	0.07	0.07	0.07										
Subtotal State Funds	0.00	0.00	1.17	1.40	1.65	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			0.41	0.41	0.42	0.40										
Total Sources of Funds	0.00	0.00	3.95	3.90	4.24	5.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			3.91	3.87	3.82	5.63										
.																
Existing Debt Service			0.03	0.03	0.41	0.03										
New Debt Service																
Total Use of Funds	0.00	0.00	3.95	3.90	4.24	5.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

PVTA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY) 86	87	88	89	90	91	Projected Data (FY) 92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			3.25	3.03	3.24	3.55										
Local Property Tax Assessment			3.03	3.33	3.37	3.39										
Intra-Agency Transfers																
Non-Operating Revenue			0.12	0.00	0.00	0.15										
Other Operating Revenue			0.30	0.64	0.85	1.31										
.																
Subtotal Local Funds	0.00	0.00	6.70	7.01	7.46	8.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			4.30	4.68	5.39	6.41										
Grants/Contract Assistance			0.00	0.08	0.24	0.60										
Subtotal State Funds	0.00	0.00	4.30	4.76	5.63	7.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			3.25	3.28	2.88	1.98										
Total Sources of Funds	0.00	0.00	14.25	15.05	15.97	17.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			13.90	14.58	15.43	16.47										
.																
Existing Debt Service			0.35	0.47	0.53	0.92										
New Debt Service																
Total Use of Funds	0.00	0.00	14.25	15.05	15.97	17.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	0.00	0.00	(0.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

GMTA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			0.12	0.16	0.58	0.52										
Local Property Tax Assessment			0.12	0.10	0.10	0.10										
Intra-Agency Transfers																
Non-Operating Revenue			0.00	0.01	0.00	0.00										
Other Operating Revenue			0.53	0.57	0.10	0.07										
.																
Subtotal Local Funds	0.00	0.00	0.78	0.83	0.78	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			0.19	0.22	0.24	0.39										
Grants/Contract Assistance			0.01	0.00	0.01	0.01										
Subtotal State Funds	0.00	0.00	0.20	0.22	0.26	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			0.07	0.07	0.07	0.05										
Total Sources of Funds	0.00	0.00	1.05	1.12	1.10	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			1.05	1.12	1.10	1.10										
.																
Existing Debt Service			0.00	0.00	0.00	0.04										
New Debt Service																
Total Use of Funds	0.00	0.00	1.05	1.12	1.10	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	0.00	(0.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

SRTA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			1.54	1.57	1.53	1.68										
Local Property Tax Assessment			1.16	1.19	1.22	1.25										
Intra-Agency Transfers																
Non-Operating Revenue			0.00	0.00	0.00	0.00										
Other Operating Revenue			0.19	0.29	0.38	0.28										
.																
Subtotal Local Funds	0.00	0.00	2.88	3.05	3.12	3.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			2.23	2.34	2.97	3.74										
Grants/Contract Assistance			0.04	0.05	0.05	0.04										
Subtotal State Funds	0.00	0.00	2.27	2.39	3.02	3.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			1.90	1.90	1.90	1.91										
Total Sources of Funds	0.00	0.00	7.05	7.34	8.05	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			6.95	7.25	7.96	8.90										
.																
Existing Debt Service			0.10	0.09	0.09	0.00										
New Debt Service																
Total Use of Funds	0.00	0.00	7.05	7.34	8.05	8.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	(0.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

VTA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			0.15	0.18	0.04	0.13										
Local Property Tax Assessment			0.03	0.06	0.06	0.09										
Intra-Agency Transfers																
Non-Operating Revenue			0.01	0.01	0.00	0.00										
Other Operating Revenue			0.00	0.00	0.13	0.00										
.																
Subtotal Local Funds	0.00	0.00	0.19	0.25	0.24	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			0.10	0.12	0.23	0.26										
Grants/Contract Assistance			0.02	0.03	0.03	0.03										
Subtotal State Funds	0.00	0.00	0.12	0.15	0.26	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			0.02	0.02	0.02	0.02										
Total Sources of Funds	0.00	0.00	0.32	0.42	0.52	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			0.31	0.40	0.51	0.50										
.																
Existing Debt Service			0.01	0.01	0.01	0.02										
New Debt Service																
Total Use of Funds	0.00	0.00	0.32	0.42	0.52	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

WRTA Cash Flow Summary

17-Jun-92 15:39

Baseline Scenario Assumptions

(Inflated Dollars in Millions)	Historical Data (FY)						Projected Data (FY)									
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
OPERATIONS																
Source of Funds																
Local																
Fares			2.80	2.72	2.95	2.86										
Local Property Tax Assessment			1.43	1.50	1.54	1.58										
Intra-Agency Transfers																
Non-Operating Revenue			0.08	0.07	0.24	0.20										
Other Operating Revenue			0.12	0.85	0.59	1.36										
.																
Subtotal Local Funds	0.00	0.00	4.43	5.13	5.31	6.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State																
.																
.																
.																
Operating Reimbursement			2.97	3.46	4.34	4.81										
Grants/Contract Assistance			0.07	0.05	0.09	0.11										
Subtotal State Funds	0.00	0.00	3.04	3.52	4.43	4.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Federal																
Section 9																
.																
Subtotal Federal Funds			1.35	1.57	1.32	1.28										
Total Sources of Funds	0.00	0.00	8.82	10.22	11.07	12.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Use of Funds																
Operating Expenses																
.																
.																
.																
.																
.																
Subtotal Operating Expenses			8.55	9.93	10.52	11.11										
.																
Existing Debt Service			0.26	0.28	0.54	1.08										
New Debt Service																
Total Use of Funds	0.00	0.00	8.82	10.22	11.07	12.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Operating Surplus (Deficit)	0.00	0.00	0.00	(0.00)	0.00	(0.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Operating Surplus (Deficit)																
Transfers To Capital Program																

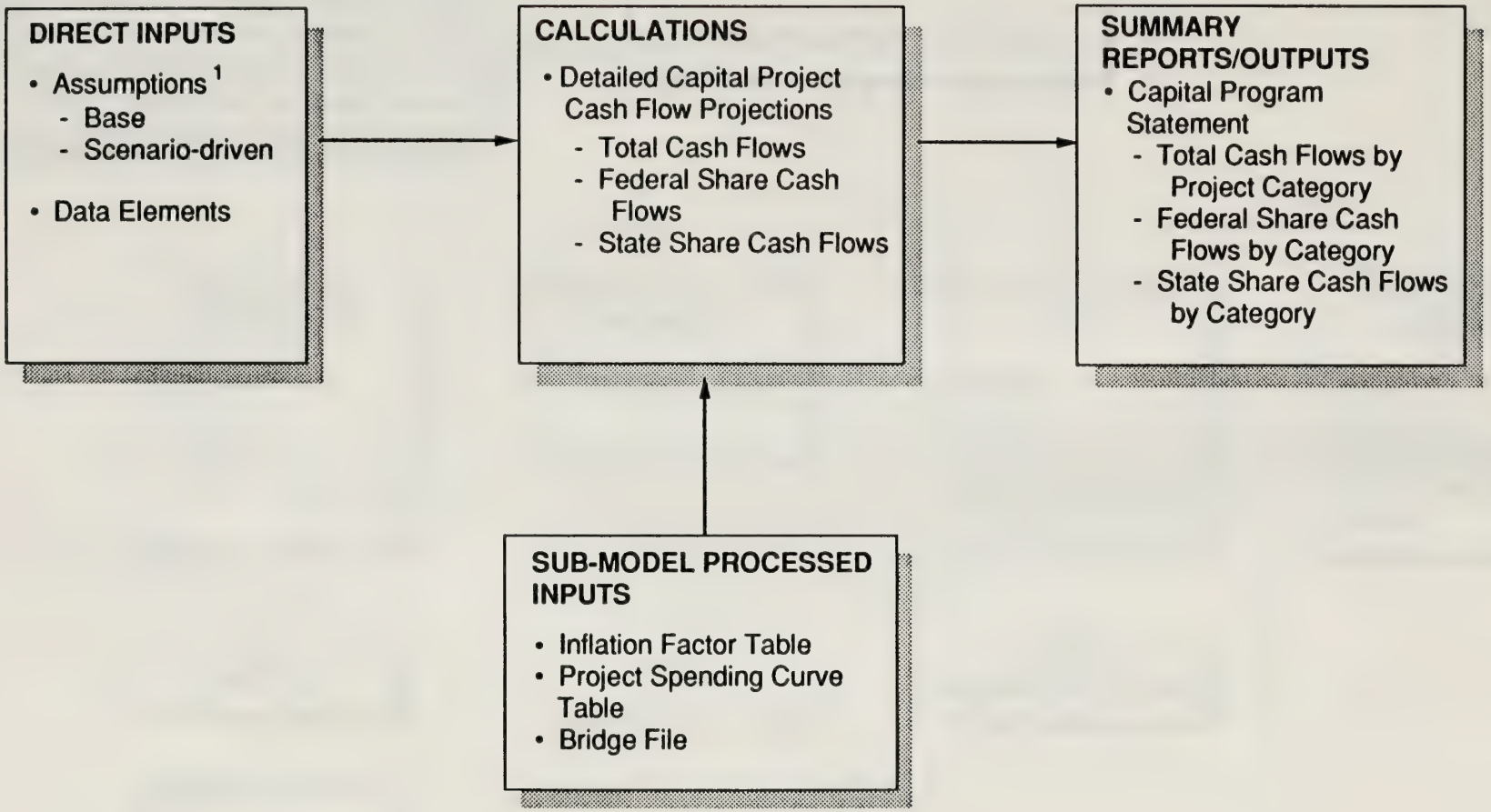
Commonwealth of Massachusetts, Executive Office of Transportation and Construction

MHD Financial Planning and Analysis Module

Documentation and User Training Package

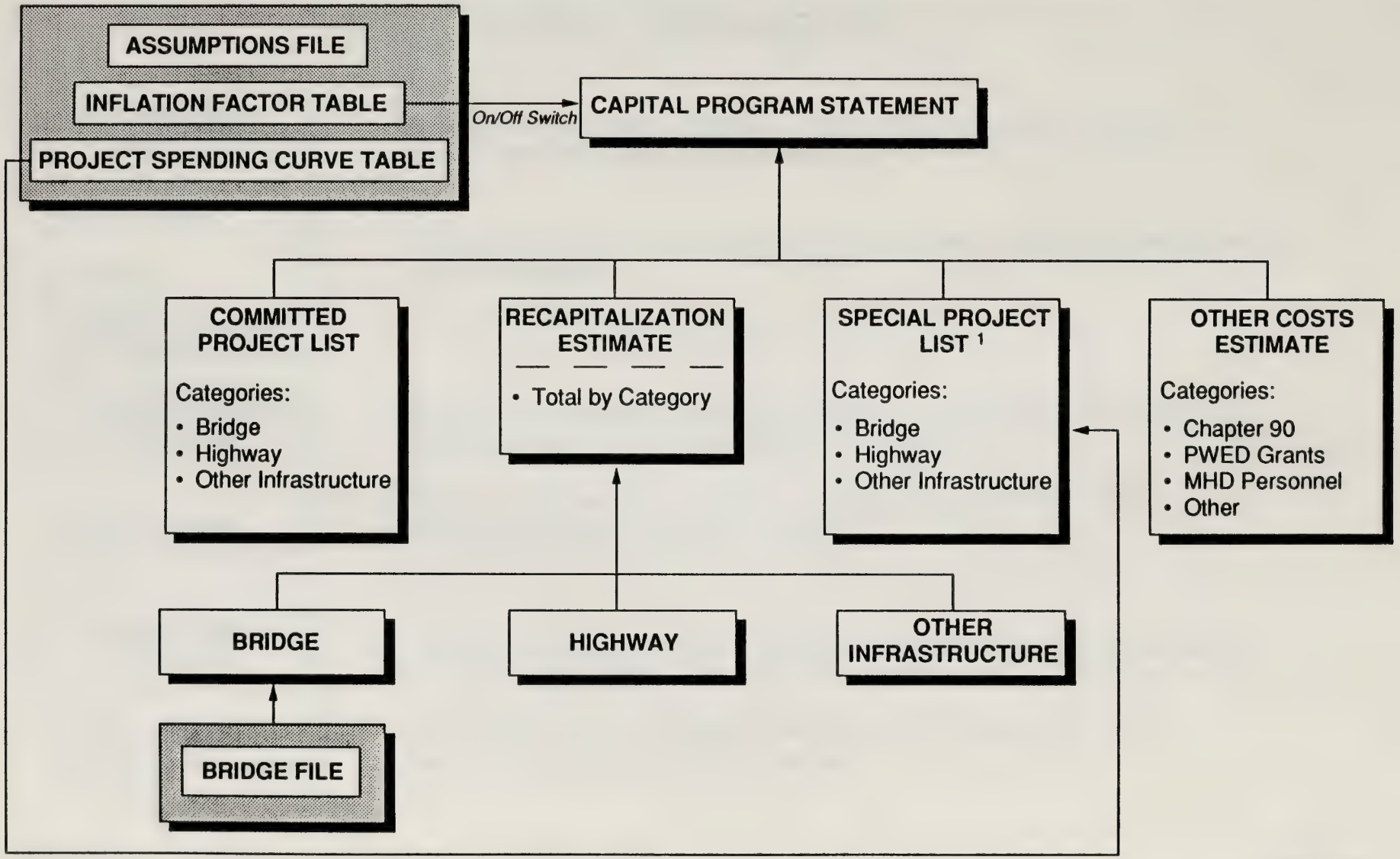
Deloitte & Touche

Functional Overview of the MHD Module



1. Assumptions are explained in detail on the Assumptions page of the model printout.

Operational Overview of the MHD Module



1. The recapitalization impacts of new capital projects have not been analyzed.



Capital Program Statement

Major Components

Committed Project List

CATEGORIES:

- Bridge
- Highway
- Other Infrastructure

- Special projects (bridge, highway, other infrastructure) that are "live" (under contract) or have been advertised
- Project cash flows include construction costs only; totals link to the summary program statement

Recapitalization Estimate

Bridge Category

- Bridge recapitalization needs (maintenance, rehabilitation, replacement) estimated at a network-level using a life cycle model
- Project cash flows by construction, design (PE), and ROW; totals link to the summary program statement

Recapitalization Estimate

Highway Category

- Highway recapitalization needs (pavement management, signals, signs) estimated at a network-level using a life cycle model and MHD forecasts
- Project cash flows by construction, design (PE), and ROW; totals link to the summary program statement

Capital Program Statement

Major Components -- Continued

Recapitalization Estimate

Other Infrastructure Category

- Other infrastructure needs (facilities and equipment, TSM) estimated at an aggregate-level using MHD forecasts
- Total project cash flows link to the summary program statement

Special Project List

CATEGORIES:

- Bridge
- Highway
- Other Infrastructure

- Special projects (bridge, highway, other infrastructure) that are in addition to the recapitalization needs. Sub-categories include:
  - major bridge expansion
  - new bridge
  - demonstration project
  - drainage improvement
  - new capacity
  - noise barriers
  - relocation
  - revised interchange
  - safety improvement
  - parking facility
- Project cash flows by construction, design (PE), and ROW; totals link to the summary program statement

Other Costs Estimate

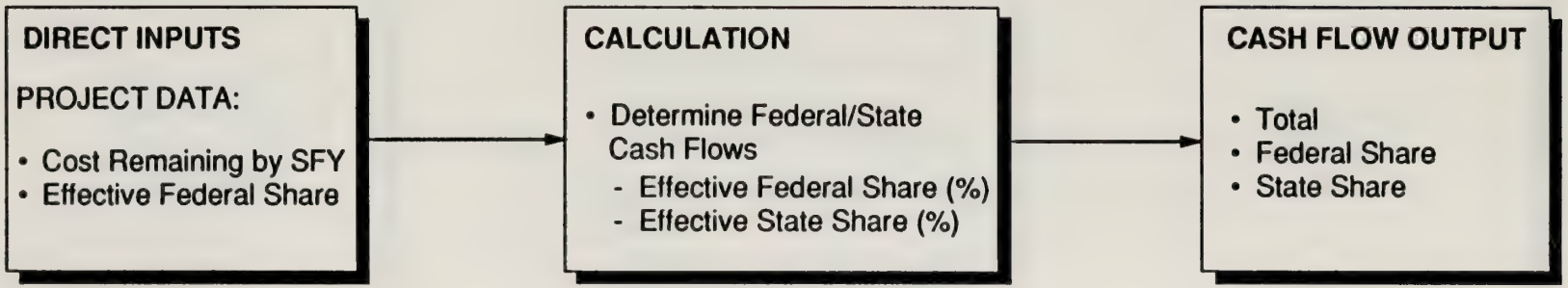
CATEGORIES:

- Chapter 90
- PWED Grants
- MHD Personnel
- Other

- Other capital-related program costs (Chapter 90, PWED grants, MHD personnel, other) estimated at an aggregate-level by EOTC/MHD
- Total project cash flows link to the summary program statement

Capital Program Statement

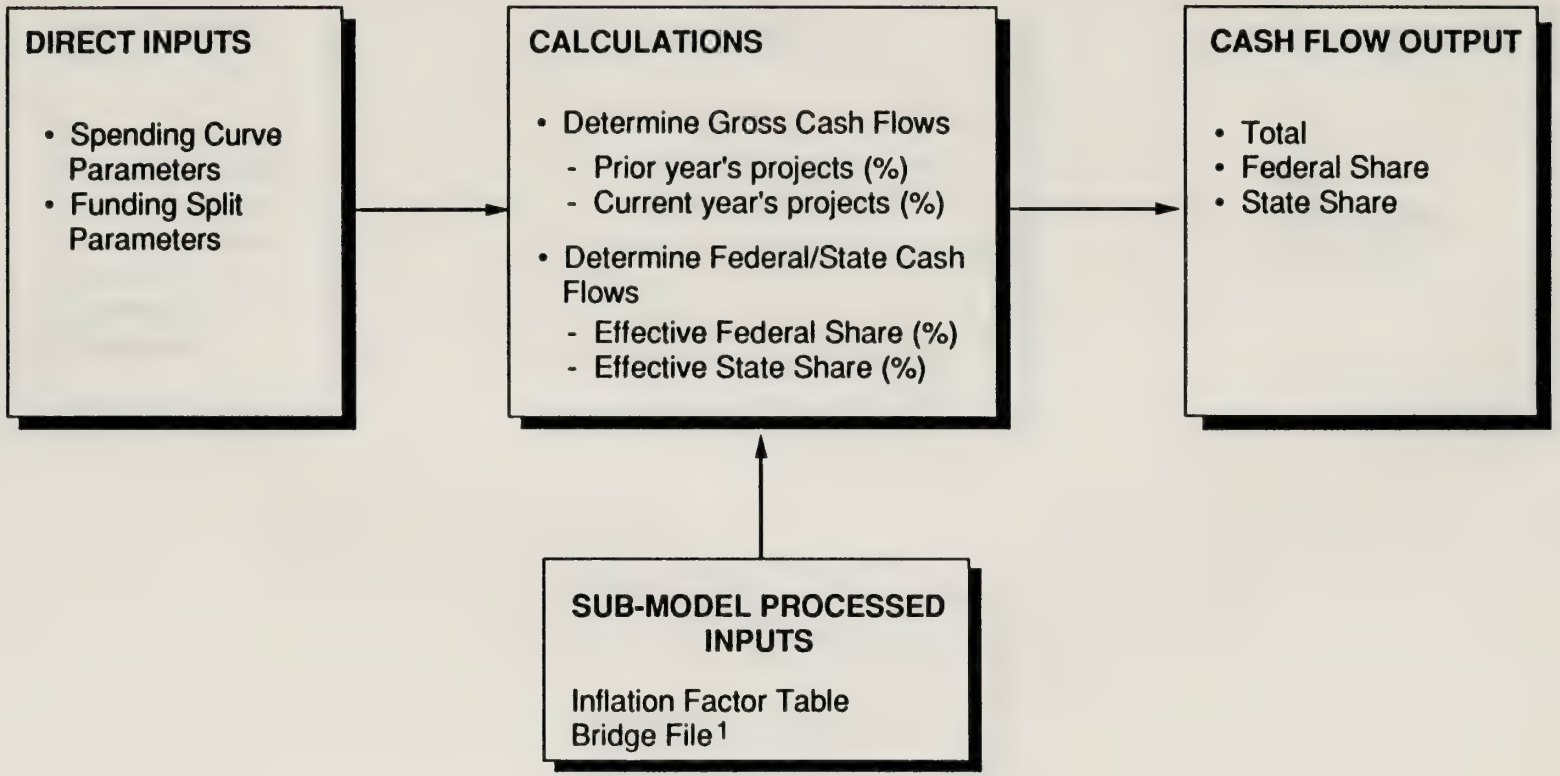
Functional View of Committed Project List



- Data sources noted on Assumptions page of model output
- Note all data in the project database are not operative in the calculation -- the items listed below are included as "FYI" items
  - Contract #: background information
  - Start and Estimated Completion Dates: background information
- Committed project cash flows are not subject to inflation

Capital Program Statement

Functional View of Bridge Recapitalization

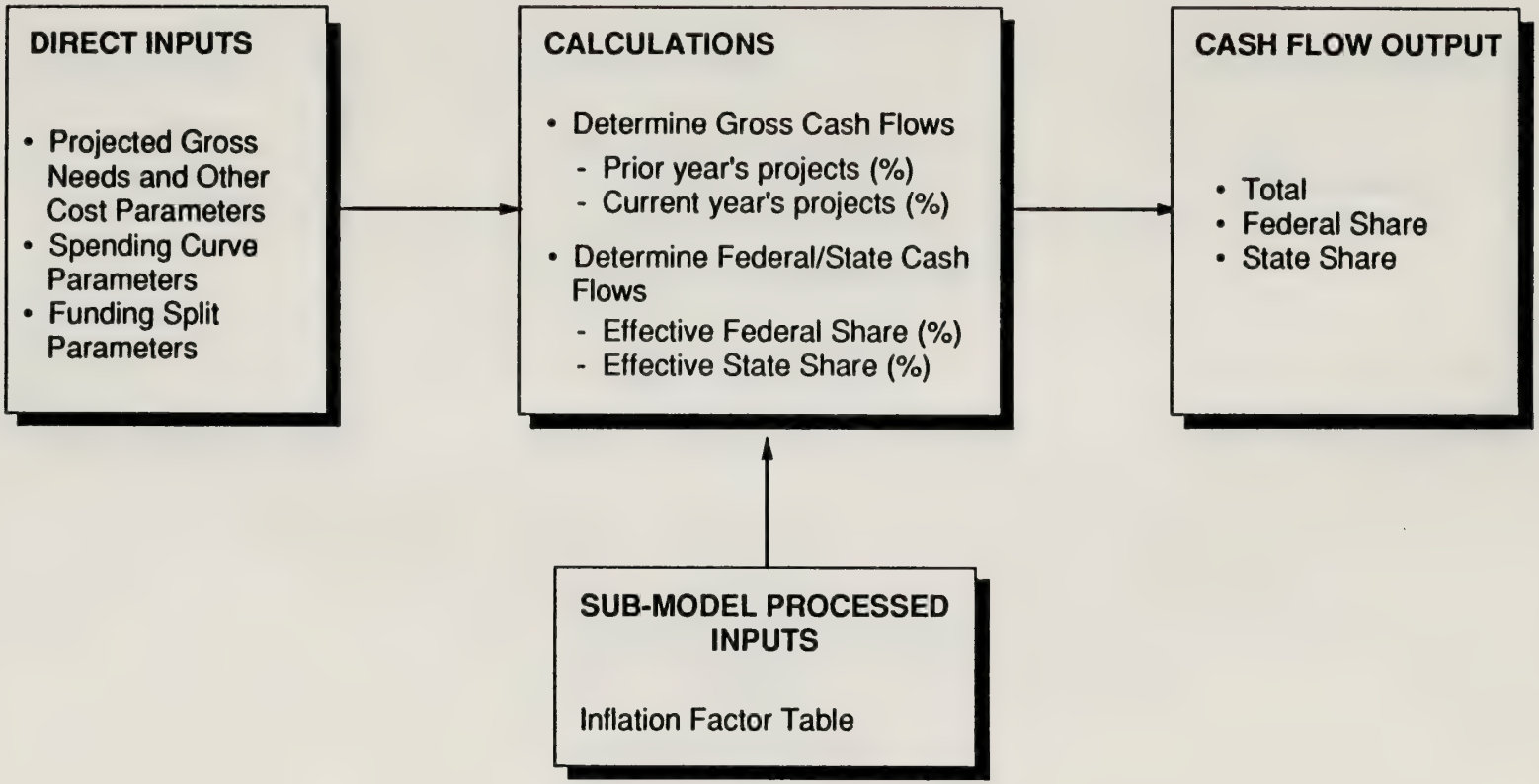


- Data sources noted on Assumptions page of model output

1. See Bridge File section for a detailed discussion.

Capital Program Statement

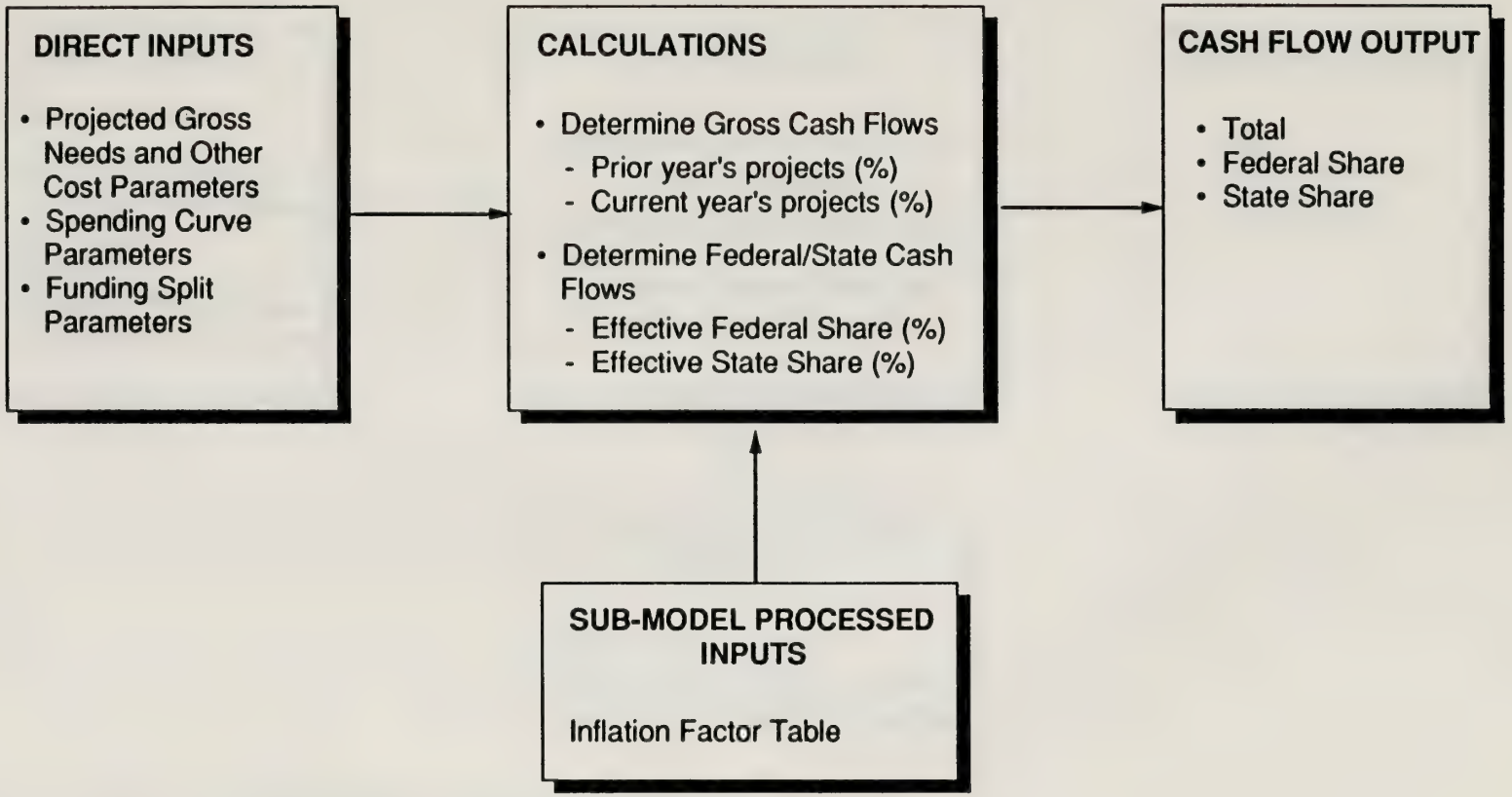
Functional View of Highway Recapitalization



- Data sources noted on Assumptions page of model output

Capital Program Statement

Functional View of Other Infrastructure Recapitalization

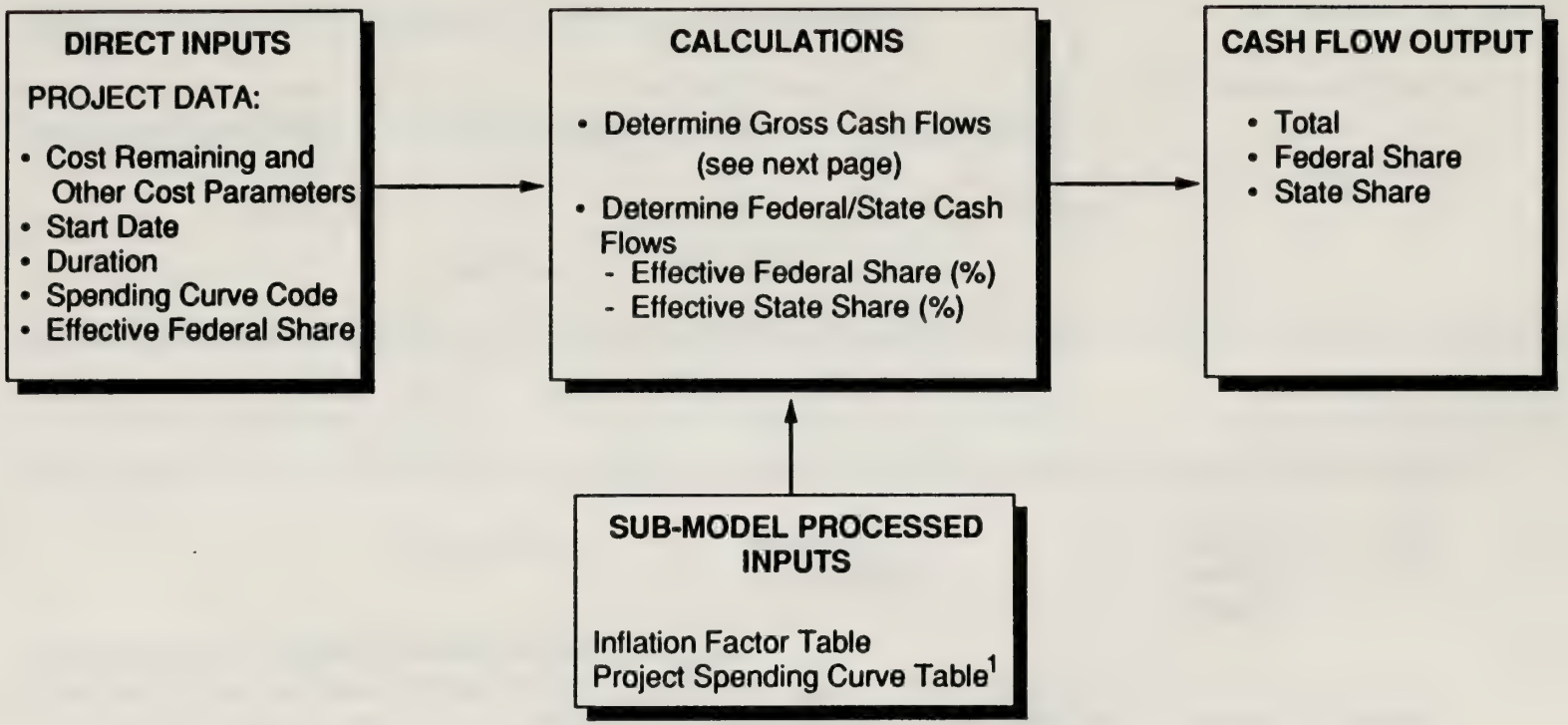


- Data sources noted on Assumptions page of model output



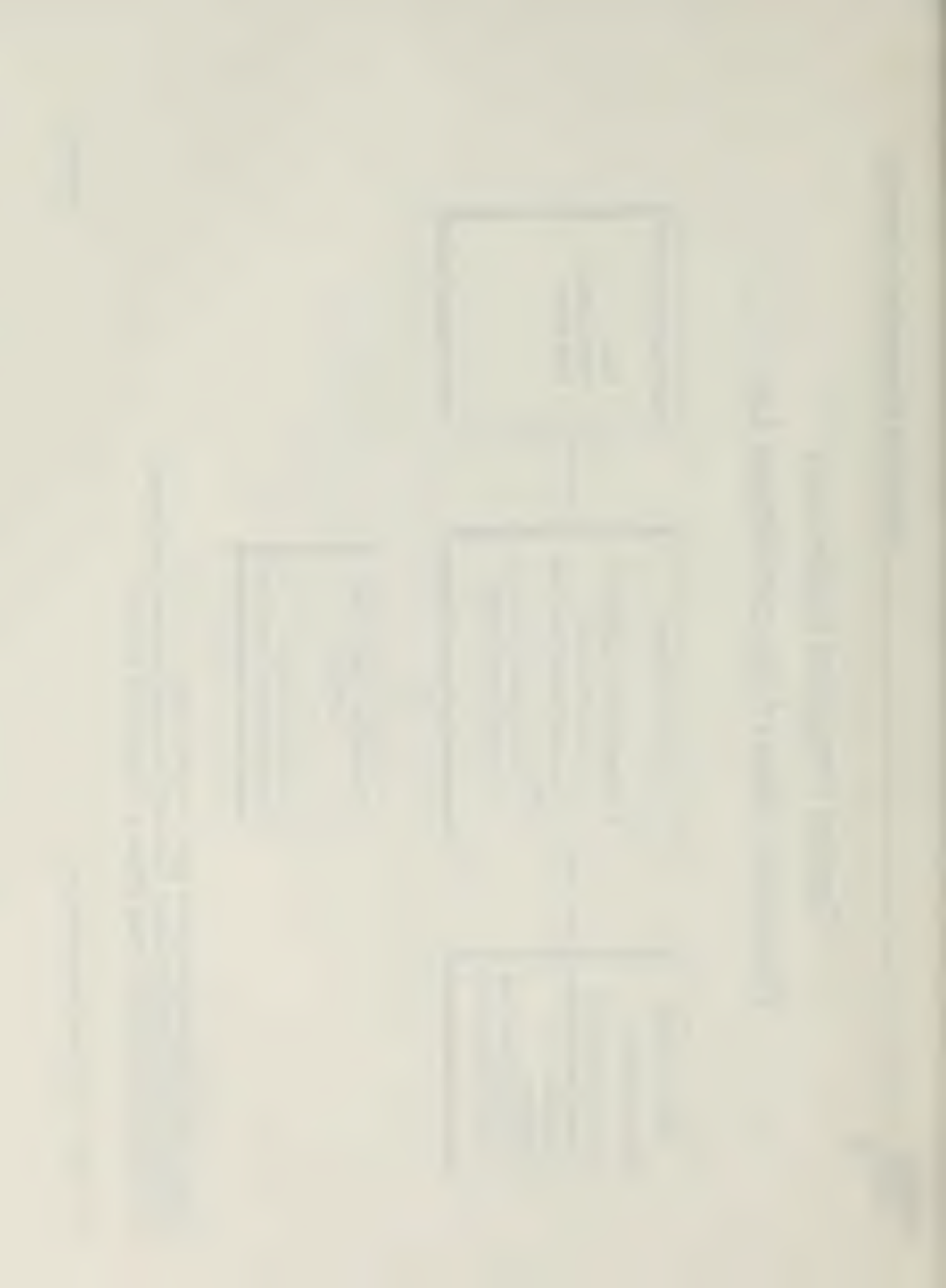
Capital Program Statement

Functional View of Special Project List



- Data sources noted on Assumptions page of model output
- A "Priority" Code column is included to identify the criticality of each listed project; each project was ranked (1 - most critical; 3 - least critical) by MHD

1. See Assumptions File section for a detailed discussion.



Capital Program Statement

Special Project Gross Cash Flow Calculation

Basic Structure: @IF(condition, "true" value, "false" value)

Condition: @IF(R$8 >= $N10 #AND# R$8 < ($N10+$010),

- R$8 — *Current Year*
- $N10 — *Start Year*
- #AND# — *Link*
- R$8 — *Current Year*
- ($N10+$010) — *Start Year+Duration*

- To satisfy the condition, the current year must be within the time span of the project (defined by Start Year and Duration)

"True" Value: @VLOOKUP($P10,<<ASSUMP.WK3>>$SPENDCURVE1,(R$8-$N10)+1)*$H10,

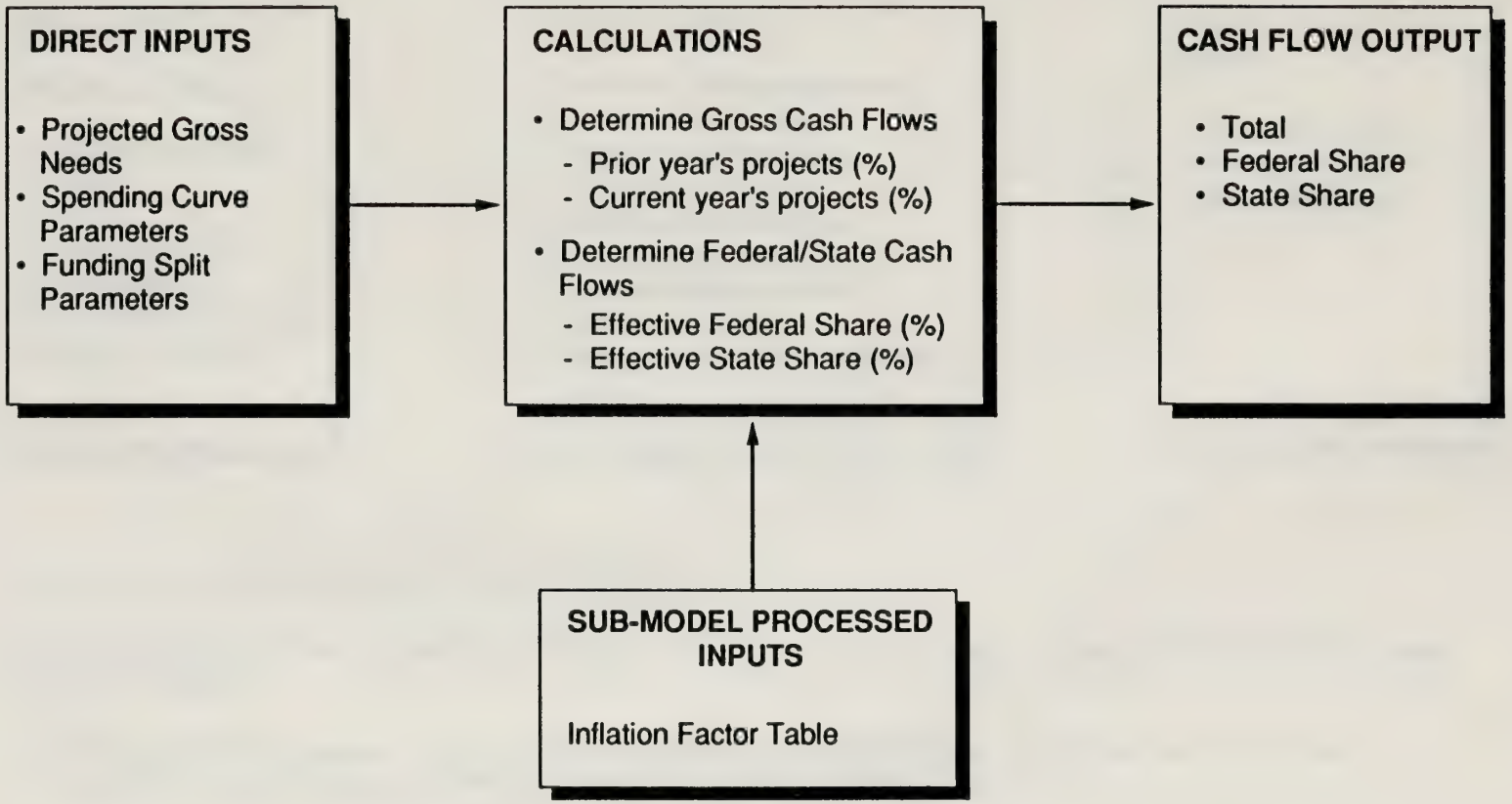
- $P10 — *Curve Code*
- <<ASSUMP.WK3>>$SPENDCURVE1 — *File and Range identification*
- (R$8-$N10)+1 — *Current Year-Start Year+1*
- $H10 — *Cost*

- If the condition is satisfied, the "true" value is returned
- The "true" value is a fraction of the cost allocated to the project in the database
- The function "looks up" the proper fraction in the Project Spending Curve Table, and multiplies it by the cost
  - the Curve Code assigned to the project identifies the proper row in the Table
  - the File and Range names identify the range containing the Project Spending Curve Table
  - Current Year minus Start Year plus 1 identifies the proper column in the Table

"False" Value: 0

Capital Program Statement

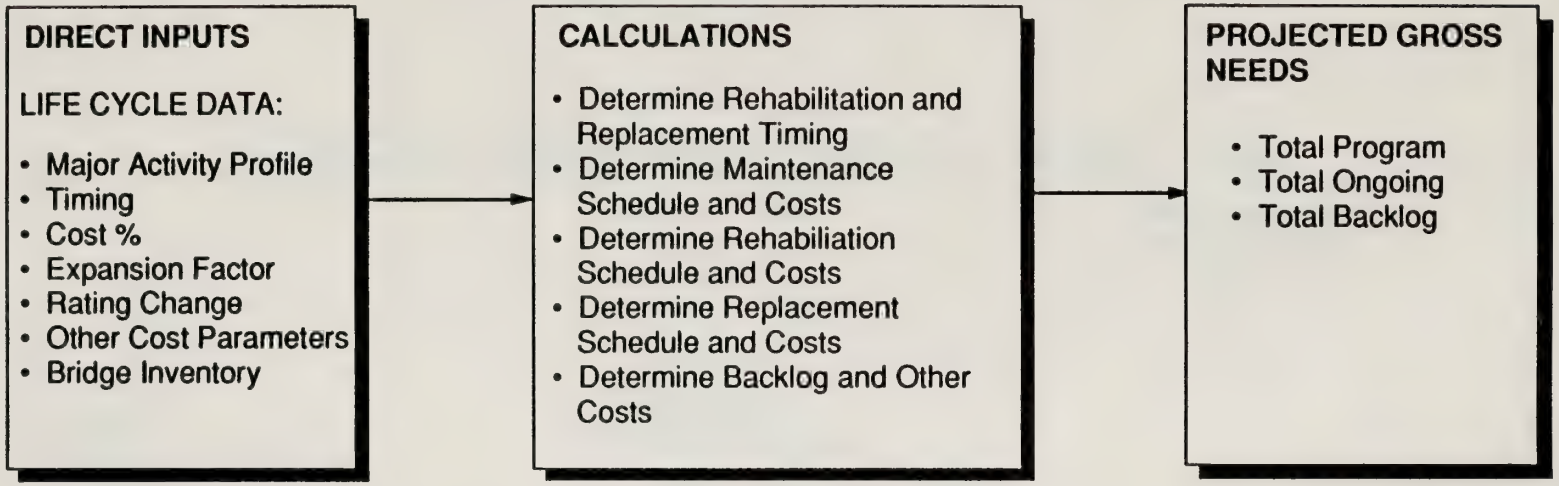
Functional View of Other Costs Estimate



- Data sources noted on Assumptions page of model output

Capital Program Statement

Processed Inputs -- Bridge File (Functional View)

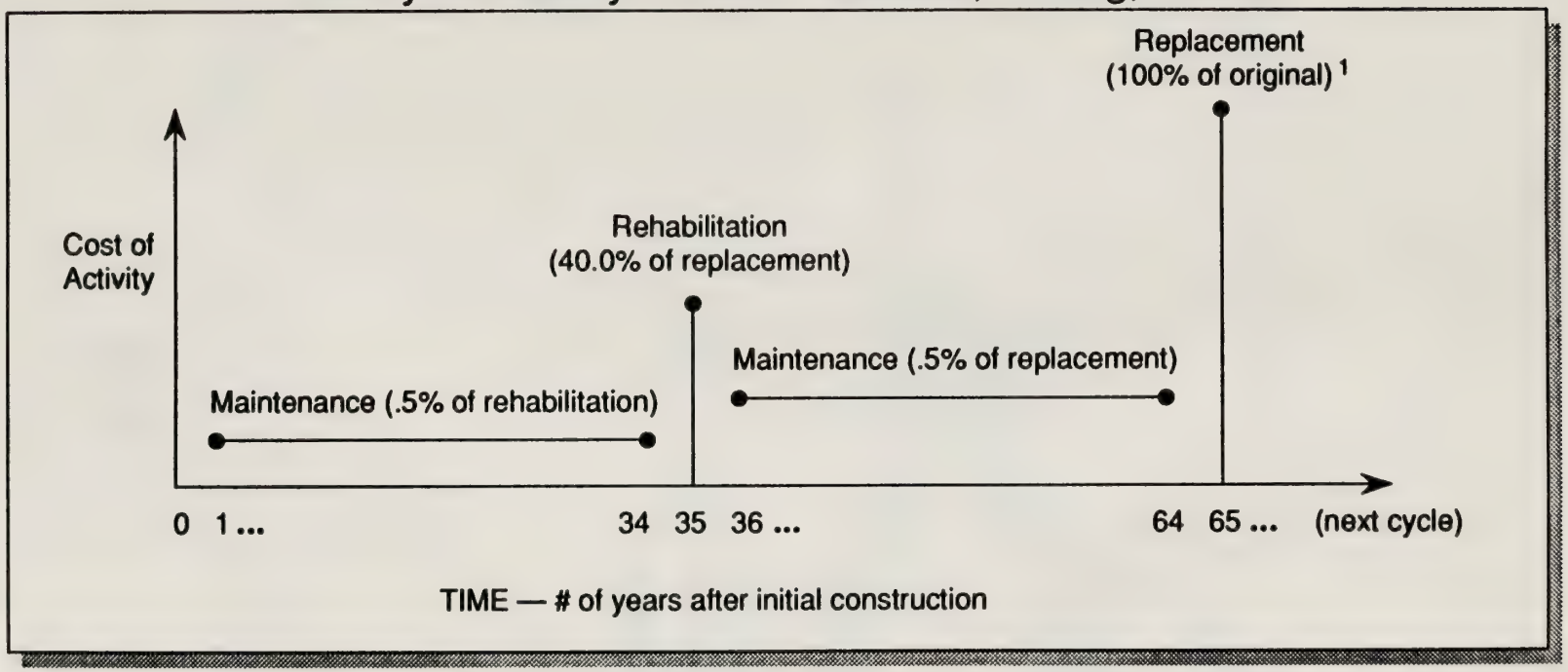


- Data sources noted on Assumptions page of model output
- Projected gross needs are estimated at a network-level using a life cycle model in conjunction with MHD's bridge inventory database
- The life cycle model focuses on major activities (maintenance, rehabilitation, and replacement) that must be undertaken in order to preserve the existing investment in the bridge system
- The current life cycle model parameters are based on a long-term objective of upgrading the current condition level over time
- "Backlog" needs are estimated by the model and are spread evenly over the 10-year planning period

Capital Program Statement

Processed Inputs -- Bridge File

Life Cycle Activity Profile: Activities, Timing, Costs

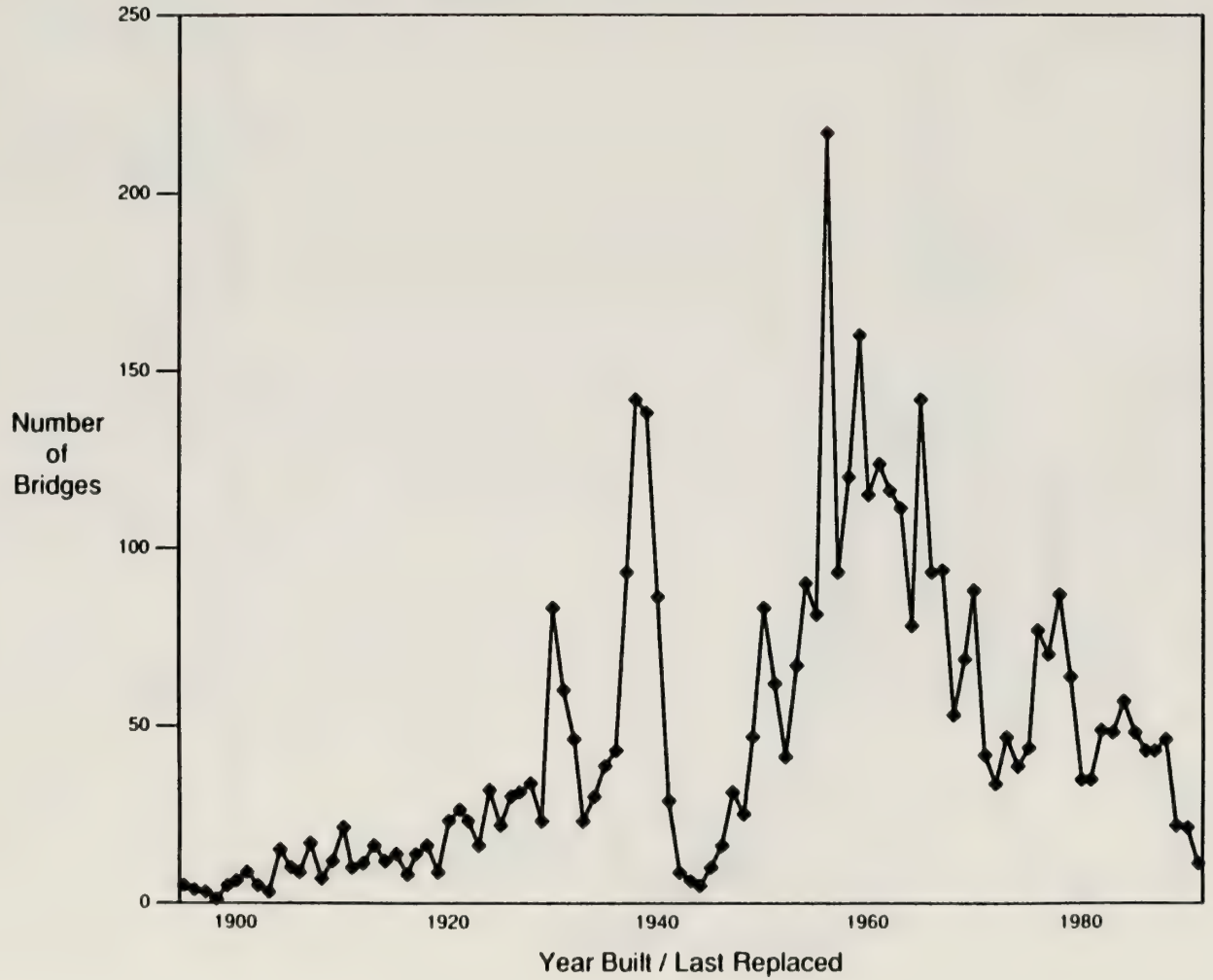


1. Total cost = "original" cost * expansion factor

Capital Program Statement

Processed Inputs -- Bridge File

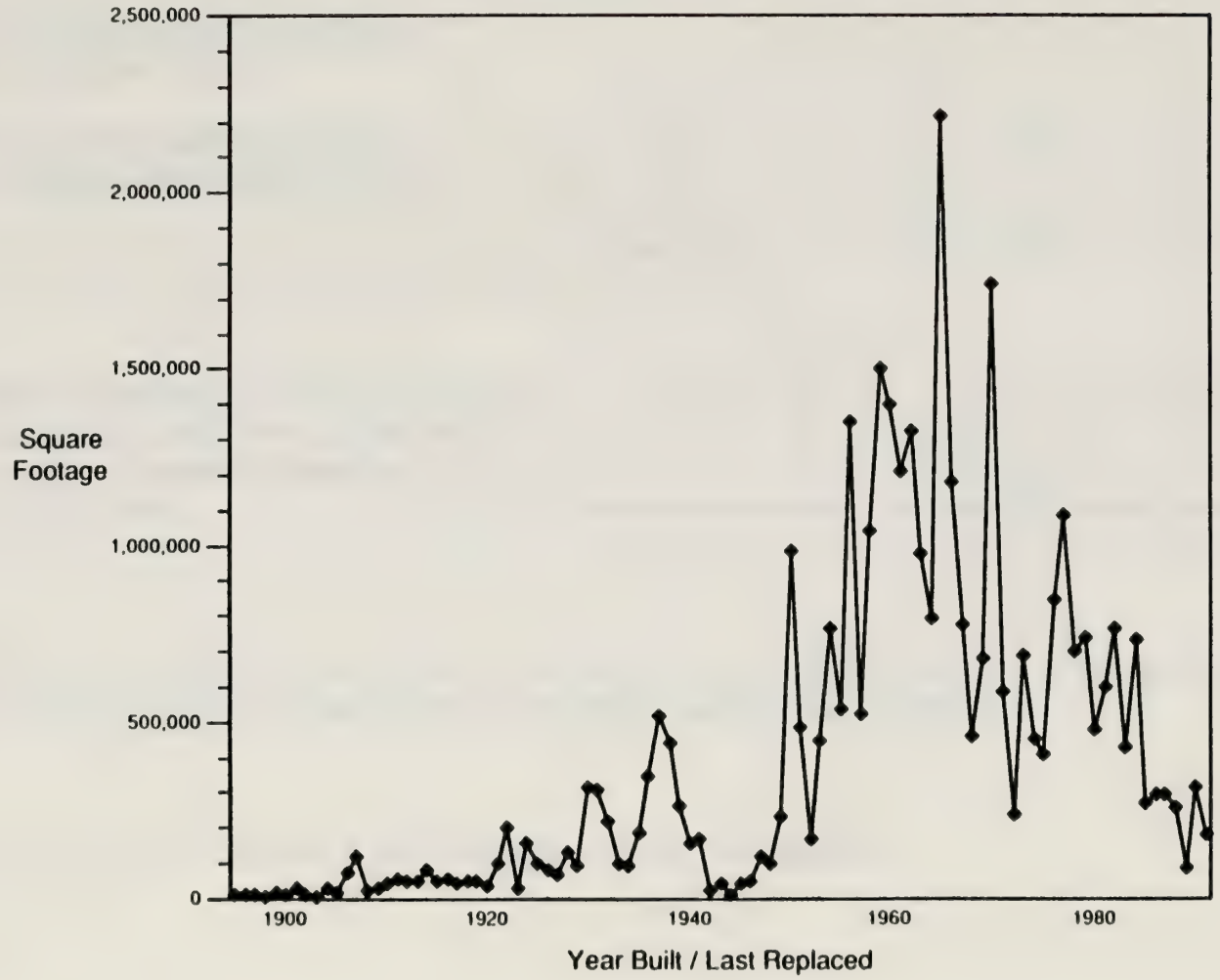
Bridge Inventory Distribution



Capital Program Statement

Processed Inputs -- Bridge File

Bridge Inventory Distribution

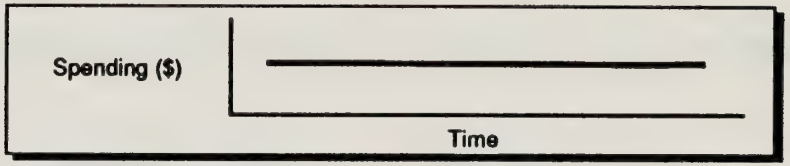


Capital Program Statement

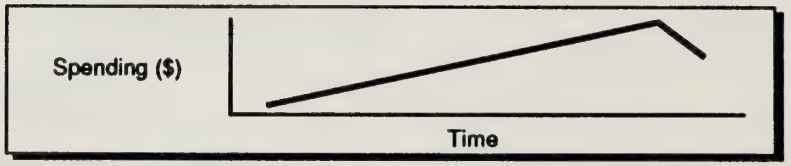
Processed Inputs -- Project Spending Curve Table

The Project Spending Curve Table includes two sub-tables:

- "Flat" spending sub-table: level spending over life of the project



- "Curved" spending sub-table: spending ramps up to a peak close to the end of the project, simulating phasing of large capital projects



- The Project Spending Curve Table is a flexible library of project spending profiles -- it can be expanded as further information on capital project spending patterns is gathered

- Currently, only the Special Project list accesses this information

Capital Program Statement

Processed Inputs -- Inflation Factor Table

- Inflation is assumed to be 3.5% per annum
- The Base Year is 1992 (the inflation Factor in 1992 is always 1)
- The inflation table is set up with an "Inflation Flag", which is a one-cell range named IFLAG
  - IFLAG is a value that functions as an on/off switch -- "0" is off, and "1" is on
  - The formulas that calculate the inflation factor for each year are set up as follows:

    Factor = Previous Year's Factor * (1 + (0.035 * IFLAG))

  - When IFLAG is "0", the Factor is always "1"
- On the Capital Program Statement (inflation is "built in" to the model at the summary level only), each year's spending in a cash flow is multiplied by that year's inflation factor
- When IFLAG is "1", all lines in the Capital Program Statement are inflated except Committed Project spending

MHD Module

Next Steps

- Training of EOTC personnel on the model has been completed
- This is a "living" model
  - Needs constant refinement and updated data to improve the level of detail and sophistication
  - It should be modified as required
- The capital program should be looped back into the Recapitalization Estimate -- completion of major expansions over the next decade will substantially increase recapitalization requirements in the future
- The impact of the capital program on operating costs should be determined and incorporated into the model
- The Bridge Recapitalization component should be refined to allow a more detailed analysis of "what if" scenarios

MHD Module

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MHD CAPITAL PROGRAM MODEL – ASSUMPTIONS

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General Assumptions:

1. The spending curve and funding split parameters were provided by MHD.

Bridge Recapitalization Assumptions:

1. The projected gross needs are "pulled" from the Bridge file.

Highway Recapitalization Assumptions:

1. The pavement management projected gross needs (construction costs) were provided by MHD and are based on the pavement management forecasting model ("%–based" allocation method).

   This model was used to determine the annual investment required to maintain the current road condition over the planning period.

   The construction costs projected are "fully–loaded" costs and represent a "bid number".

   Design (PE) and ROW needs (non–construction costs) were projected based on a % of construction cost; these parameters were provided by MHD.

   The design needs are based on next year's construction needs; ROW needs are based on the current year's construction needs.

2. The signals and signs projected gross needs (all costs) were provided by MHD and are based on the current upgrading programs in place.

   The total construction costs includes a cost multiplier to capture additional construction period costs.

Other Infrastructure Recapitalization Assumptions:

1. The projected gross needs (all costs) were provided by MHD and are based on an earlier DPW study (Ten–Year Highway Needs Study – July 18, 1990).

   The costs in this report are expressed in 1989$; these costs were inflated by 3.5% per year to reflect 1992$.

   The average annual cost was calculated by dividing the new inflated 10–year total by 10.

2. The total TSM construction costs includes a cost multiplier to capture additional construction period costs.

Special Projects Assumptions:

1. The special projects "database" was provided by MHD.

   The total construction costs includes a cost multiplier to capture additional construction period costs.

2. The construction spending pattern is based on curves contained in the Assumptions file

3. The design spending pattern is based on the assumption that the costs will be incurred up to 2 years prior to and including the project start year; for multiple year periods, the design costs are spread evenly.

4. The ROW spending pattern is based on the assumption that the costs will be incurred in the year that the project starts.

Other Costs Assumptions:

1. The projected gross needs (all costs) were provided by MHD and/or EOTC

Committed Projects Assumptions:

1. The committed projects "database" was provided by MHD.

   "Hard–coded" information includes the projected gross cash flows.

MHD CAPITAL PROGRAM SUMMARY

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(inflated $ – million)

	Projected Gross Cash Flow									
	State Fiscal Year									
CATEGORY	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Committed Projects	25.1	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
– Bridge	153.7	213.6	271.1	285.9	278.9	231.0	202.1	333.4	364.9	373.6
– Highway	112.2	116.1	120.2	124.4	128.8	133.3	137.9	142.8	147.8	152.9
– Other Infrastructure	40.5	41.9	43.4	44.9	46.5	48.1	49.8	51.5	53.3	55.2
Subtotal Recapitalization	306.4	371.7	434.7	455.2	454.1	412.3	389.8	527.7	566.0	581.8
Special Projects	80.8	162.4	234.5	271.4	286.0	164.4	57.6	10.1	0.0	0.0
– Design (PE)	37.0	40.4	43.8	37.4	28.9	20.3	33.8	33.1	37.6	33.5
– ROW	5.8	32.2	29.3	10.5	9.9	2.1	1.9	2.6	3.9	5.3
– Other Costs	119.0	123.2	127.5	132.0	136.6	141.4	146.3	151.4	156.7	162.2
Subtotal Other	161.8	195.8	200.6	179.8	175.4	163.8	182.0	187.2	198.2	201.0
Total Costs	574.2	736.8	869.8	906.4	915.5	740.5	629.3	725.0	764.2	782.8
% of Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

MHD CAPITAL PROGRAM SUMMARY

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(inflated $ – million)

	Projected Cash Flow – Federal Share									
	State Fiscal Year									
CATEGORY	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Committed Projects	18.6	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
– Bridge	99.6	139.4	181.8	193.9	186.7	150.6	130.0	217.3	243.4	257.5
– Highway	69.0	71.4	73.9	76.5	79.2	82.0	84.8	87.8	90.9	94.0
– Other Infrastructure	10.4	10.7	11.1	11.5	11.9	12.3	12.7	13.2	13.6	14.1
Subtotal Recapitalization	178.9	221.5	266.8	281.9	277.8	244.8	227.5	318.2	347.9	365.7
Special Projects	62.7	126.0	181.9	210.6	221.9	127.6	44.7	7.8	0.0	0.0
– Design (PE)	23.3	25.9	28.5	23.2	16.9	10.3	18.4	19.3	23.2	20.3
– ROW	4.5	25.0	22.7	8.1	7.7	1.6	1.4	2.0	3.0	4.1
– Other Costs	4.1	4.3	4.4	4.6	4.8	4.9	5.1	5.3	5.5	5.6
Subtotal Other	31.9	55.1	55.7	35.9	29.3	16.9	25.0	26.6	31.6	30.1
Total Costs	292.2	407.8	504.4	528.4	529.0	389.3	297.2	352.6	379.6	395.8
% of Total	51%	55%	58%	58%	58%	53%	47%	49%	50%	51%

MHD CAPITAL PROGRAM SUMMARY

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(inflated $ – million)

	Projected Cash Flow – State Share									
	State Fiscal Year									
CATEGORY	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Committed Projects	6.5	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
– Bridge	54.1	74.3	89.3	92.0	92.2	80.4	72.1	116.2	121.5	116.1
– Highway	43.2	44.7	46.3	47.9	49.6	51.3	53.1	55.0	56.9	58.9
– Other Infrastructure	30.1	31.2	32.3	33.4	34.6	35.8	37.1	38.4	39.7	41.1
Subtotal Recapitalization	127.5	150.2	167.9	173.3	176.3	167.5	162.3	209.5	218.1	216.1
Special Projects	18.1	36.4	52.5	60.8	64.1	36.8	12.9	2.3	0.0	0.0
– Design (PE)	13.7	14.6	15.3	14.2	12.0	10.0	15.4	13.9	14.4	13.2
– ROW	1.3	7.2	6.6	2.3	2.2	0.5	0.4	0.6	0.9	1.2
– Other Costs	114.9	118.9	123.1	127.4	131.8	136.4	141.2	146.2	151.3	156.6
Subtotal Other	129.9	140.7	144.9	143.9	146.0	146.9	157.0	160.6	166.6	170.9
Total Costs	282.0	329.0	365.3	378.0	386.4	351.2	332.2	372.4	384.6	387.0
% of Total	49%	45%	42%	42%	42%	47%	53%	51%	50%	49%

BRIDGE RECAPITALIZATION

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	Projected Gross Needs (1992$ – million)											
	State Fiscal Year											
CATEGORY	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	TOTAL
– Maintenance	12.9	13.2	13.6	14.2	14.7	15.2	16.1	16.7	16.6	18.0	18.7	169.8
– Rehabilitation	42.7	85.3	123.0	114.8	99.6	108.7	80.3	65.1	181.9	97.0	63.5	1062.0
– Replacement	19.1	81.5	70.9	131.1	130.0	106.6	72.8	72.3	97.3	140.1	186.6	1108.4
Subtotal Construction	74.6	180.0	207.6	260.1	244.2	230.6	169.2	154.1	295.7	255.1	268.8	2340.1
– Design (PE)												
– Rehabilitation	5.7	8.3	7.7	6.7	7.3	5.4	4.4	12.2	6.5	4.3	2.5	71.2
– Replacement	3.6	7.2	13.2	13.1	10.8	7.4	7.3	9.8	14.2	18.9	16.7	122.2
– ROW	0.4	1.6	1.4	2.6	2.6	2.2	1.5	1.5	2.0	2.8	3.8	22.4
Total Costs	84.4	197.1	230.0	282.6	264.9	245.5	182.4	177.7	318.4	281.1	291.8	2555.8

BRIDGE RECAPITALIZATION

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CATEGORY	*SPENDING CURVE PARAMETERS* Current Year	Following Year	Projected Gross Cash Flow (1992$ – million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
– Maintenance	100%	0%	13.2	13.6	14.2	14.7	15.2	16.1	16.7	16.6	18.0	18.7
– Rehabilitation	70%	30%	72.6	111.7	117.3	104.1	105.9	88.8	69.7	146.8	122.5	73.5
– Replacement	70%	30%	62.8	74.1	113.1	130.3	113.6	83.0	72.4	89.8	127.3	172.7
Subtotal Construction			148.5	199.4	244.5	249.1	234.8	187.9	158.8	253.2	267.7	264.9
– Design (PE)												
– Rehabilitation	100%	0%	8.3	7.7	6.7	7.3	5.4	4.4	12.2	6.5	4.3	2.5
– Replacement	100%	0%	7.2	13.2	13.1	10.8	7.4	7.3	9.8	14.2	18.9	16.7
– ROW	100%	0%	1.6	1.4	2.6	2.6	2.2	1.5	1.5	2.0	2.8	3.8
Total Costs			165.6	221.8	267.0	269.8	249.7	201.1	182.4	275.9	293.7	287.9

BRIDGE RECAPITALIZATION

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FUNDING SPLIT PARAMETERS

CATEGORY	Effective Federal Share	Effective State Share	Projected Cash Flow – Federal Share(1992$ – million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
– Maintenance	8%	92%	1.1	1.1	1.1	1.2	1.2	1.3	1.3	1.3	1.4	1.5
– Rehabilitation	64%	36%	46.4	71.5	75.1	66.6	67.8	56.8	44.6	94.0	78.4	47.1
– Replacement	78%	22%	48.7	57.5	87.7	101.1	88.2	64.4	56.2	69.7	98.8	134.0
Subtotal Construction			96.2	130.1	163.9	169.0	157.2	122.5	102.2	165.0	178.6	182.6
– Design (PE)												
– Rehabilitation	56%	44%	4.6	4.3	3.8	4.1	3.0	2.5	6.9	3.7	2.4	1.4
– Replacement	78%	22%	5.6	10.3	10.2	8.4	5.7	5.7	7.6	11.0	14.6	13.0
– ROW	78%	22%	1.3	1.1	2.1	2.0	1.7	1.1	1.1	1.5	2.2	2.9
Total Costs			107.7	145.8	179.9	183.5	167.6	131.8	117.8	181.2	197.8	199.9

BRIDGE RECAPITALIZATION

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	Projected Cash Flow – State Share(1992$ – million)									
	State Fiscal Year									
CATEGORY	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
– Maintenance	12.1	12.5	13.0	13.5	14.0	14.8	15.4	15.3	16.5	17.2
– Rehabilitation	26.1	40.2	42.2	37.5	38.1	32.0	25.1	52.9	44.1	26.5
– Replacement	14.1	16.6	25.3	29.2	25.5	18.6	16.2	20.1	28.5	38.7
Subtotal Construction	52.3	69.3	80.6	80.2	77.6	65.4	56.7	88.2	89.1	82.3
– Design (PE)										
– Rehabilitation	3.6	3.4	2.9	3.2	2.4	1.9	5.4	2.9	1.9	1.1
– Replacement	1.6	3.0	2.9	2.4	1.6	1.6	2.2	3.2	4.2	3.7
– ROW	0.4	0.3	0.6	0.6	0.5	0.3	0.3	0.4	0.6	0.8
Total Costs	57.9	76.0	87.1	86.4	82.1	69.3	64.6	94.7	95.9	88.0

HIGHWAY RECAPITALIZATION

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	Projected Gross Needs (1992$ - million)											
	State Fiscal Year											
CATEGORY	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	TOTAL
- Construction		95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0	950.0
- Design (PE)		2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	28.5
- ROW		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Pavement Management	0.0	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	978.5
- Construction		7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	72.0
- Design (PE)		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	12.0
Subtotal Signals	0.0	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	84.0
- Construction		6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	62.1
- Design (PE)		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	4.3
Subtotal Signs	0.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	66.4
Total Costs	0.0	112.9	112.9	112.9	112.9	112.9	112.9	112.9	112.9	112.9	112.9	1128.9

OTHER COST PARAMETERS

Pavement Management	
- Design (PE)	3.00% (of construction cost)
- ROW	0.00% (of construction cost)
Signals	
- Construction Cost Multiplier	1.20
Signs	
- Construction Cost Multiplier	1.20

HIGHWAY RECAPITALIZATION

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CATEGORY	SPENDING CURVE PARAMETERS: Current Year	SPENDING CURVE PARAMETERS: Following Year	Projected Gross Cash Flow (1992$ – million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
– Construction	100%	0%	95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0	95.0
– Design (PE)	100%	0%	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
– ROW	100%	0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Pavement Management			97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9
– Construction	100%	0%	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
– Design (PE)	100%	0%	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Subtotal Signals			8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
– Construction	100%	0%	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
– Design (PE)	100%	0%	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Subtotal Signs			6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Total Costs			112.9	112.9	112.9	112.9	112.9	112.9	112.9	112.9	112.9	112.9

HIGHWAY RECAPITALIZATION

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FUNDING SPLIT PARAMETERS

CATEGORY	Effective Federal Share	Effective State Share	Projected Cash Flow – Federal Share(1992$ – million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
– Construction	64%	36%	60.8	60.8	60.8	60.8	60.8	60.8	60.8	60.8	60.8	60.8
– Design (PE)	0%	100%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
– ROW	0%	100%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Pavement Management			60.8	60.8	60.8	60.8	60.8	60.8	60.8	60.8	60.8	60.8
– Construction	16%	84%	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
– Design (PE)	0%	100%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Signals			1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
– Construction	76%	24%	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
– Design (PE)	0%	100%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Signs			4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
Total Costs			66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7

HIGHWAY RECAPITALIZATION

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	Projected Cash Flow – State Share(1992$ – million)									
	State Fiscal Year									
CATEGORY	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
– Construction	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2	34.2
– Design (PE)	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
– ROW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal Pavement Management	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1
– Construction	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
– Design (PE)	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Subtotal Signals	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
– Construction	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
– Design (PE)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Subtotal Signs	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Total Costs	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2	46.2

OTHER INFRASTRUCTURE RECAPITALIZATION

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	Projected Gross Needs (1992$ - million)											
	State Fiscal Year											
CATEGORY	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**TOTAL**
Facilities & Equipment		28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	283.9
TSM		10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	107.4
Total Costs	0.0	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	391.3

OTHER COST PARAMETERS

TSM	
- Construction Cost Multiplier	1.20

OTHER INFRASTRUCTURE RECAPITALIZATION

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CATEGORY	*SPENDING CURVE PARAMETERS* Current Year	Following Year	Projected Gross Cash Flow (1992$ – million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Facilities & Equipment	100%	0%	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4
TSM	100%	0%	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
Total Costs			39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1	39.1

OTHER INFRASTRUCTURE RECAPITALIZATION

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FUNDING SPLIT PARAMETERS

CATEGORY	Effective Federal Share	Effective State Share	Projected Cash Flow – Federal Share(1992$ – million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Facilities & Equipment	8%	92%	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
TSM	72%	28%	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
Total Costs			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

OTHER INFRASTRUCTURE RECAPITALIZATION

16-Jun-92

	Projected Cash Flow – State Share(1992$ – million)									
	State Fiscal Year									
CATEGORY	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Facilities & Equipment	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1	26.1
TSM	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total Costs	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1

EOTC Financial Model
Assumptions Worksheet

Inflation

Inflation Flag 1 (0=off,1=on)

	Historical Years				Base Year	Projected Years																		
1992 Base Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Capital																									
Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Factor	0.87	0.90	0.93	0.97	1.00	1.04	1.07	1.11	1.15	1.19	1.23	1.27	1.32	1.36	1.41	1.46	1.51	1.56	1.62	1.68	1.73	1.79	1.86	1.92	1.99
Operating																									
Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Factor	0.87	0.90	0.93	0.97	1.00	1.04	1.07	1.11	1.15	1.19	1.23	1.27	1.32	1.36	1.41	1.46	1.51	1.56	1.62	1.68	1.73	1.79	1.86	1.92	1.99

EOTC Financial Model
Assumptions Worksheet

MHD Project Spending Curve Table

Note: Unshaded=flat spending, Shaded=curved spending

PROJECT DURATION	CURVE CODE	PROJECT YEAR 1	2	3	4	5	6	7	8	9	10	TOTAL
1	1	100%										100%
2	2	50%	50%									100%
3	3	34%	33%	33%								100%
4	4	25%	25%	25%	25%							100%
5	5	20%	20%	20%	20%	20%						100%
1	11	100%										100%
2	12	65%	35%									100%
3	13	45%	45%	10%								100%
4	14	20%	40%	30%	10%							100%
5	15	20%	40%	20%	10%	10%						100%

SPECIAL PROJECTS

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Project	Classification	Name/Location	Total Construction (1992$ M)	*Effective Federal Share*	Remaining Design (1992$ M)	*Effective Federal Share*	Remaining ROW (1992$ M)	*Effective Federal Share*	Start Date (SFY)	Project Duration (Years)	Project Spending Curve	"Priority" Code (1,2, or 3)
Bridge	Major Expansion	Salem-Beverly Bridge	71.3	77.60%	0.6	77.60%	2.0	77.60%	1993	3	13	1
Bridge	New Bridge	Westfield River Bridge	10.6	77.60%	1.5	77.60%	0.4	77.60%	1997	2	12	3
Highway	Demonstration	Lawrence	10.4	77.60%	0.9	77.60%	0.0	77.60%	1996	2	12	1
Highway	Demonstration	East Milton Decks	12.5	77.60%	1.0	77.60%	0.3	77.60%	1993	1	11	1
Highway	Drainage Improvement	Route 9, Wellesley	10.0	77.60%	2.0	77.60%	0.5	77.60%	1995	1	11	2
Highway	Drainage Improvement	Hobbs Brook	56.3	77.60%	3.0	77.60%	1.0	77.60%	1996	2	12	2
Highway	New Capacity	I-95/Route 128, Canton	3.8	77.60%	0.3	77.60%	0.1	77.60%	1995	2	12	3
Highway	New Capacity	Route 146, Worcester-Millbury	150.0	77.60%	0.0	77.60%	18.0	77.60%	1995	3	13	1
Highway	New Capacity	Crosby Drive/Middlesex Turnpike, Bedford	15.6	77.60%	1.3	77.60%	1.0	77.60%	1994	2	12	3
Highway	New Capacity	I-93/MP Interchange, Woburn	11.3	77.60%	0.9	77.60%	1.0	77.60%	1997	2	12	1
Highway	New Capacity	Route 57 West, Agawam	20.0	77.60%	1.5	77.60%	2.0	77.60%	1996	2	12	1
Highway	New Capacity	Route 44, Raynham-Middleborough	45.0	77.60%	2.0	77.60%	2.0	77.60%	1996	2	12	3
Highway	New Capacity	Route 1, I-95 to I-495	18.8	77.60%	1.5	77.60%	1.0	77.60%	1997	2	12	2
Highway	New Capacity	River Road, Andover/Lawrence	6.9	77.60%	0.0	77.60%	0.1	77.60%	1993	1	11	1
Highway	New Capacity	Route 6 Cape Double Barrel	125.0	77.60%	5.0	77.60%	2.0	77.60%	1997	2	12	2
Highway	New Capacity	I-495/Marlborough Interchange	12.5	77.60%	0.9	77.60%	0.0	77.60%	1995	2	12	1
Highway	New Capacity	Route 2, Fitchburg/Leominster	18.8	77.60%	1.5	77.60%	0.1	77.60%	1994	2	12	2
Highway	New Capacity	Route 140, Mansfield	4.0	77.60%	0.0	77.60%	0.0	77.60%	1993	2	12	2
Highway	New Capacity	Route 44/Samoset Street, Plymouth	4.4	77.60%	0.1	77.60%	1.1	77.60%	1993	2	12	1
Highway	New Capacity	Route 44, Plymouth	100.0	77.60%	3.0	77.60%	22.5	77.60%	1994	3	13	1
Highway	New Capacity	Boardman Street, East Boston	10.6	77.60%	1.0	77.60%	0.3	77.60%	1998	2	12	2
Highway	New Capacity	Merrill Road, Pittsfield	12.8	77.60%	1.2	77.60%	1.1	77.60%	1994	3	13	2
Highway	New Capacity	Center and Seymour Streets, Pittsfield	4.2	77.60%	0.2	77.60%	1.1	77.60%	1995	1	11	3
Highway	New Capacity	Route 128, Randolph/Wellesley	76.4	77.60%	6.8	77.60%	1.8	77.60%	1997	4	14	1
Highway	New Capacity	Route 3 South (HOV?)	56.3	77.60%	4.5	77.60%	0.0	77.60%	1997	3	13	1
Highway	New Capacity	Route 3 North	130.0	77.60%	11.6	77.60%	3.1	77.60%	1995	5	15	1
Highway	Noise Barriers	Type II, Milton/Quincy	5.6	77.60%	0.9	77.60%	0.1	77.60%	1994	1	11	2
Highway	Relocation	Upper North Street, Pittsfield	12.5	77.60%	0.4	77.60%	0.0	77.60%	1993	2	12	3
Highway	Relocation	Route 140, Franklin	17.0	77.60%	0.0	77.60%	1.5	77.60%	1994	2	12	1
Highway	Revised Interchange	Route 1/Route 114 Interchange, Peabody	10.6	77.60%	1.0	77.60%	1.0	77.60%	1996	2	12	2
Highway	Revised Interchange	Route 1/I-95 Interchange, Sharon	12.5	77.60%	1.5	77.60%	1.0	77.60%	1994	2	12	2
Highway	Revised Interchange	I-93/Route 125, Wilmington	5.0	77.60%	0.4	77.60%	0.5	77.60%	1996	2	12	3
Highway	Revised Interchange	Route 24/Route 140 Interchange, Taunton	2.5	77.60%	0.0	77.60%	0.0	77.60%	1995	1	11	2
Highway	Revised Interchange	I-93/Route 129 Interchange, Wilmington	12.5	77.60%	0.5	77.60%	0.3	77.60%	1993	2	12	2
Highway	Safety Improvement	Route 2, Concord	12.5	77.60%	1.5	77.60%	0.5	77.60%	1995	2	12	1
Highway	Safety Improvement	Lexington Marrett Road	1.9	77.60%	0.2	77.60%	0.0	77.60%	1994	1	11	1
Highway	Safety Improvement	Route 2 Truck Escape Ramps	1.1	77.60%	0.1	77.60%	0.5	77.60%	1995	1	11	2
Highway	Safety Improvement	Route 139, Marshfield	3.8	77.60%	0.4	77.60%	0.1	77.60%	1993	2	12	1
Highway	Safety Improvement	Coltsville Intersection, Pittsfield	2.5	77.60%	0.2	77.60%	0.1	77.60%	1993	1	11	2
Highway	Safety Improvement	Routes 7 & 20, Pittsfield	3.8	77.60%	1.0	77.60%	0.5	77.60%	1994	2	12	1
Highway	Safety Improvement	Shawinigan Drive, Chicopee	4.4	77.60%	0.5	77.60%	0.8	77.60%	1994	1	11	3
Total			1105.1		60.7		69.3					

OTHER COST PARAMETERS

Construction Cost Multiplier	1.25

SPECIAL PROJECTS

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Project	Classification	Name/Location	Projected Gross Construction Cash Flow(1992$ - million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Bridge	Major Expansion	Salem-Beverly Bridge	32.1	32.1	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bridge	New Bridge	Westfield River Bridge	0.0	0.0	0.0	0.0	6.9	3.7	0.0	0.0	0.0	0.0
Highway	Demonstration	Lawrence	0.0	0.0	0.0	6.7	3.6	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	East Milton Decks	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Route 9, Wellesley	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Hobbs Brook	0.0	0.0	0.0	36.6	19.7	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-95/Route 128, Canton	0.0	0.0	2.4	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 146, Worcester-Millbury	0.0	0.0	67.5	67.5	15.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Crosby Drive/Middlesex Turnpike, Bedford	0.0	10.2	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-93/MP Interchange, Woburn	0.0	0.0	0.0	0.0	7.3	3.9	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 57 West, Agawam	0.0	0.0	0.0	13.0	7.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Raynham-Middleborough	0.0	0.0	0.0	29.3	15.8	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 1, I-95 to I-495	0.0	0.0	0.0	0.0	12.2	6.6	0.0	0.0	0.0	0.0
Highway	New Capacity	River Road, Andover/Lawrence	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 6 Cape Double Barrel	0.0	0.0	0.0	0.0	81.3	43.8	0.0	0.0	0.0	0.0
Highway	New Capacity	I-495/Marlborough Interchange	0.0	0.0	8.1	4.4	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 2, Fitchburg/Leominster	0.0	12.2	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 140, Mansfield	2.6	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44/Samoset Street, Plymouth	2.8	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Plymouth	0.0	45.0	45.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Boardman Street, East Boston	0.0	0.0	0.0	0.0	0.0	6.9	3.7	0.0	0.0	0.0
Highway	New Capacity	Merrill Road, Pittsfield	0.0	5.7	5.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Center and Seymour Streets, Pittsfield	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 128, Randolph/Wellesley	0.0	0.0	0.0	0.0	15.3	30.6	22.9	7.6	0.0	0.0
Highway	New Capacity	Route 3 South (HOV?)	0.0	0.0	0.0	0.0	25.3	25.3	5.6	0.0	0.0	0.0
Highway	New Capacity	Route 3 North	0.0	0.0	26.0	52.0	26.0	13.0	13.0	0.0	0.0	0.0
Highway	Noise Barriers	Type II, Milton/Quincy	0.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Upper North Street, Pittsfield	8.1	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Route 140, Franklin	0.0	11.1	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/Route 114 Interchange, Peabody	0.0	0.0	0.0	6.9	3.7	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/I-95 Interchange, Sharon	0.0	8.1	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 125, Wilmington	0.0	0.0	0.0	3.3	1.8	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 24/Route 140 Interchange, Taunton	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 129 Interchange, Wilmington	8.1	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2, Concord	0.0	0.0	8.1	4.4	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Lexington Marrett Road	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2 Truck Escape Ramps	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 139, Marshfield	2.4	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Coltsville Intersection, Pittsfield	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Routes 7 & 20, Pittsfield	0.0	2.4	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Shawinigan Drive, Chicopee	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			78.1	151.6	211.5	236.6	240.8	133.7	45.3	7.6	0.0	0.0

SPECIAL PROJECTS

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Project	Classification	Name/Location	Projected Construction Cash Flow – Federal Share(1992$ – million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Bridge	Major Expansion	Salem–Beverly Bridge	24.9	24.9	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bridge	New Bridge	Westfield River Bridge	0.0	0.0	0.0	0.0	5.4	2.9	0.0	0.0	0.0	0.0
Highway	Demonstration	Lawrence	0.0	0.0	0.0	5.2	2.8	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	East Milton Decks	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Route 9, Wellesley	0.0	0.0	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Hobbs Brook	0.0	0.0	0.0	28.4	15.3	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I–95/Route 128, Canton	0.0	0.0	1.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 146, Worcester–Millbury	0.0	0.0	52.4	52.4	11.6	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Crosby Drive/Middlesex Turnpike, Bedford	0.0	7.9	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I–93/MIP Interchange, Woburn	0.0	0.0	0.0	0.0	5.7	3.1	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 57 West, Agawam	0.0	0.0	0.0	10.1	5.4	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Raynham–Middleborough	0.0	0.0	0.0	22.7	12.2	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 1, I–95 to I–495	0.0	0.0	0.0	0.0	9.5	5.1	0.0	0.0	0.0	0.0
Highway	New Capacity	River Road, Andover/Lawrence	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 6 Cape Double Barrel	0.0	0.0	0.0	0.0	63.1	34.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I–495/Marlborough Interchange	0.0	0.0	6.3	3.4	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 2, Fitchburg/Leominster	0.0	9.5	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 140, Mansfield	2.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44/Samoset Street, Plymouth	2.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Plymouth	0.0	34.9	34.9	7.8	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Boardman Street, East Boston	0.0	0.0	0.0	0.0	0.0	5.4	2.9	0.0	0.0	0.0
Highway	New Capacity	Merrill Road, Pittsfield	0.0	4.5	4.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Center and Seymour Streets, Pittsfield	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 128, Randolph/Wellesley	0.0	0.0	0.0	0.0	11.9	23.7	17.8	5.9	0.0	0.0
Highway	New Capacity	Route 3 South (HOV?)	0.0	0.0	0.0	0.0	19.6	19.6	4.4	0.0	0.0	0.0
Highway	New Capacity	Route 3 North	0.0	0.0	20.2	40.4	20.2	10.1	10.1	0.0	0.0	0.0
Highway	Noise Barriers	Type II, Milton/Quincy	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Upper North Street, Pittsfield	6.3	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Route 140, Franklin	0.0	8.6	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/Route 114 Interchange, Peabody	0.0	0.0	0.0	5.4	2.9	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/I–95 Interchange, Sharon	0.0	6.3	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I–93/Route 125, Wilmington	0.0	0.0	0.0	2.5	1.4	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 24/Route 140 Interchange, Taunton	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I–93/Route 129 Interchange, Wilmington	6.3	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2, Concord	0.0	0.0	6.3	3.4	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Lexington Marrett Road	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2 Truck Escape Ramps	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 139, Marshfield	1.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Coltsville Intersection, Pittsfield	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Routes 7 & 20, Pittsfield	0.0	1.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Shawinigan Drive, Chicopee	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			60.6	117.7	164.1	183.6	186.8	103.8	35.1	5.9	0.0	0.0

SPECIAL PROJECTS

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Project	Classification	Name/Location	Projected Construction Cash Flow – State Share(1992$ – million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Bridge	Major Expansion	Salem-Beverly Bridge	7.2	7.2	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bridge	New Bridge	Westfield River Bridge	0.0	0.0	0.0	0.0	1.5	0.8	0.0	0.0	0.0	0.0
Highway	Demonstration	Lawrence	0.0	0.0	0.0	1.5	0.8	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	East Milton Decks	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Route 9, Wellesley	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Hobbs Brook	0.0	0.0	0.0	8.2	4.4	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-95/Route 128, Canton	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 146, Worcester-Millbury	0.0	0.0	15.1	15.1	3.4	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Crosby Drive/Middlesex Turnpike, Bedford	0.0	2.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-93/MP Interchange, Woburn	0.0	0.0	0.0	0.0	1.6	0.9	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 57 West, Agawam	0.0	0.0	0.0	2.9	1.6	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Raynham-Middleborough	0.0	0.0	0.0	6.6	3.5	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 1, I-95 to I-495	0.0	0.0	0.0	0.0	2.7	1.5	0.0	0.0	0.0	0.0
Highway	New Capacity	River Road, Andover/Lawrence	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 6 Cape Double Barrel	0.0	0.0	0.0	0.0	18.2	9.8	0.0	0.0	0.0	0.0
Highway	New Capacity	I-495/Marlborough Interchange	0.0	0.0	1.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 2, Fitchburg/Leominster	0.0	2.7	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 140, Mansfield	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44/Samoset Street, Plymouth	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Plymouth	0.0	10.1	10.1	2.2	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Boardman Street, East Boston	0.0	0.0	0.0	0.0	0.0	1.5	0.8	0.0	0.0	0.0
Highway	New Capacity	Merrill Road, Pittsfield	0.0	1.3	1.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Center and Seymour Streets, Pittsfield	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 128, Randolph/Wellesley	0.0	0.0	0.0	0.0	3.4	6.8	5.1	1.7	0.0	0.0
Highway	New Capacity	Route 3 South (HOV?)	0.0	0.0	0.0	0.0	5.7	5.7	1.3	0.0	0.0	0.0
Highway	New Capacity	Route 3 North	0.0	0.0	5.8	11.6	5.8	2.9	2.9	0.0	0.0	0.0
Highway	Noise Barriers	Type II, Milton/Quincy	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Upper North Street, Pittsfield	1.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Route 140, Franklin	0.0	2.5	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/Route 114 Interchange, Peabody	0.0	0.0	0.0	1.5	0.8	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/I-95 Interchange, Sharon	0.0	1.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 125, Wilmington	0.0	0.0	0.0	0.7	0.4	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 24/Route 140 Interchange, Taunton	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 129 Interchange, Wilmington	1.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2, Concord	0.0	0.0	1.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Lexington Marrett Road	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2 Truck Escape Ramps	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 139, Marshfield	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Coltsville Intersection, Pittsfield	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Routes 7 & 20, Pittsfield	0.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Shawinigan Drive, Chicopee	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			17.5	34.0	47.4	53.0	53.9	30.0	10.1	1.7	0.0	0.0

SPECIAL PROJECTS

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Project	Classification	Name/Location	Projected Gross Design Cash Flow(1992$ - million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Bridge	Major Expansion	Salem-Beverly Bridge	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bridge	New Bridge	Westfield River Bridge	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	Lawrence	0.0	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	East Milton Decks	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Route 9, Wellesley	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Hobbs Brook	0.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-95/Route 128, Canton	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 146, Worcester-Millbury	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Crosby Drive/Middlesex Turnpike, Bedford	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-93/MP Interchange, Woburn	0.0	0.0	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 57 West, Agawam	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Raynham-Middleborough	0.0	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 1, I-95 to I-495	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	River Road, Andover/Lawrence	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 6 Cape Double Barrel	0.0	0.0	1.7	1.7	1.7	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-495/Marlborough Interchange	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 2, Fitchburg/Leominster	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 140, Mansfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44/Samoset Street, Plymouth	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Plymouth	2.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Boardman Street, East Boston	0.0	0.0	0.0	0.3	0.3	0.3	0.0	0.0	0.0	0.0
Highway	New Capacity	Merrill Road, Pittsfield	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Center and Seymour Streets, Pittsfield	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 128, Randolph/Wellesley	0.0	0.0	2.3	2.3	2.3	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 3 South (HOV?)	0.0	0.0	1.5	1.5	1.5	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 3 North	3.9	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Noise Barriers	Type II, Milton/Quincy	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Upper North Street, Pittsfield	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Route 140, Franklin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/Route 114 Interchange, Peabody	0.0	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/I-95 Interchange, Sharon	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 125, Wilmington	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 24/Route 140 Interchange, Taunton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 129 Interchange, Wilmington	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2, Concord	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Lexington Marrett Road	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2 Truck Escape Ramps	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 139, Marshfield	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Coltsville Intersection, Pittsfield	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Routes 7 & 20, Pittsfield	0.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Shawinigan Drive, Chicopee	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			15.9	12.3	15.2	10.0	7.1	0.3	0.0	0.0	0.0	0.0

SPECIAL PROJECTS

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Project	Classification	Name/Location	Projected Design Cash Flow – Federal Share(1992$ – million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Bridge	Major Expansion	Salem-Beverly Bridge	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bridge	New Bridge	Westfield River Bridge	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	Lawrence	0.0	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	East Milton Decks	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Route 9, Wellesley	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Hobbs Brook	0.0	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-95/Route 128, Canton	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 146, Worcester-Millbury	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Crosby Drive/Middlesex Turnpike, Bedford	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-93/MP Interchange, Woburn	0.0	0.0	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 57 West, Agawam	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Raynham-Middleborough	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 1, I-95 to I-495	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	River Road, Andover/Lawrence	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 6 Cape Double Barrel	0.0	0.0	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-495/Marlborough Interchange	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 2, Fitchburg/Leominster	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 140, Mansfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44/Samoset Street, Plymouth	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Plymouth	1.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Boardman Street, East Boston	0.0	0.0	0.0	0.3	0.3	0.3	0.0	0.0	0.0	0.0
Highway	New Capacity	Merrill Road, Pittsfield	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Center and Seymour Streets, Pittsfield	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 128, Randolph/Wellesley	0.0	0.0	1.8	1.8	1.8	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 3 South (HOV?)	0.0	0.0	1.2	1.2	1.2	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 3 North	3.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Noise Barriers	Type II, Milton/Quincy	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Upper North Street, Pittsfield	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Route 140, Franklin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/Route 114 Interchange, Peabody	0.0	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/I-95 Interchange, Sharon	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 125, Wilmington	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 24/Route 140 Interchange, Taunton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 129 Interchange, Wilmington	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2, Concord	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Lexington Marrett Road	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2 Truck Escape Ramps	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 139, Marshfield	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Coltsville Intersection, Pittsfield	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Routes 7 & 20, Pittsfield	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Shawinigan Drive, Chicopee	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			12.3	9.5	11.8	7.7	5.5	0.3	0.0	0.0	0.0	0.0

SPECIAL PROJECTS

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Project	Classification	Name/Location	Projected Design Cash Flow – State Share(1992$ – million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Bridge	Major Expansion	Salem-Beverly Bridge	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bridge	New Bridge	Westfield River Bridge	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	Lawrence	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	East Milton Decks	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Route 9, Wellesley	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Hobbs Brook	0.0	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-95/Route 128, Canton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 146, Worcester-Millbury	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Crosby Drive/Middlesex Turnpike, Bedford	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-93/MP Interchange, Woburn	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 57 West, Agawam	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Raynham-Middleborough	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 1, I-95 to I-495	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	River Road, Andover/Lawrence	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 6 Cape Double Barrel	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-495/Marlborough Interchange	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 2, Fitchburg/Leominster	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 140, Mansfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44/Samoset Street, Plymouth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Plymouth	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Boardman Street, East Boston	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Highway	New Capacity	Merrill Road, Pittsfield	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Center and Seymour Streets, Pittsfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 128, Randolph/Wellesley	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 3 South (HOV?)	0.0	0.0	0.3	0.3	0.3	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 3 North	0.9	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Noise Barriers	Type II, Milton/Quincy	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Upper North Street, Pittsfield	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Route 140, Franklin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/Route 114 Interchange, Peabody	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/I-95 Interchange, Sharon	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 125, Wilmington	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 24/Route 140 Interchange, Taunton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 129 Interchange, Wilmington	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2, Concord	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Lexington Marrett Road	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2 Truck Escape Ramps	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 139, Marshfield	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Coltsville Intersection, Pittsfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Routes 7 & 20, Pittsfield	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Shawinigan Drive, Chicopee	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			3.6	2.8	3.4	2.2	1.6	0.1	0.0	0.0	0.0	0.0

SPECIAL PROJECTS

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Project	Classification	Name/Location	Projected Gross ROW Cash Flow(1992$ - million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Bridge	Major Expansion	Salem-Beverly Bridge	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bridge	New Bridge	Westfield River Bridge	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	Lawrence	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	East Milton Decks	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Route 9, Wellesley	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Hobbs Brook	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-95/Route 128, Canton	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 146, Worcester-Millbury	0.0	0.0	18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Crosby Drive/Middlesex Turnpike, Bedford	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-93/MP Interchange, Woburn	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 57 West, Agawam	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Raynham-Middleborough	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 1, I-95 to I-495	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	River Road, Andover/Lawrence	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 6 Cape Double Barrel	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-495/Marlborough Interchange	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 2, Fitchburg/Leominster	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 140, Mansfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44/Samoset Street, Plymouth	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Plymouth	0.0	22.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Boardman Street, East Boston	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Highway	New Capacity	Merrill Road, Pittsfield	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Center and Seymour Streets, Pittsfield	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 128, Randolph/Wellesley	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 3 South (HOV?)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 3 North	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Noise Barriers	Type II, Milton/Quincy	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Upper North Street, Pittsfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Route 140, Franklin	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/Route 114 Interchange, Peabody	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/I-95 Interchange, Sharon	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 125, Wilmington	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 24/Route 140 Interchange, Taunton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 129 Interchange, Wilmington	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2, Concord	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Lexington Marrett Road	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2 Truck Escape Ramps	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 139, Marshfield	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Coltsville Intersection, Pittsfield	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Routes 7 & 20, Pittsfield	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Shawinigan Drive, Chicopee	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			3.9	28.6	23.8	6.5	6.2	0.3	0.0	0.0	0.0	0.0

SPECIAL PROJECTS

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Project	Classification	Name/Location	Projected ROW Cash Flow – Federal Share(1992$ – million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Bridge	Major Expansion	Salem-Beverly Bridge	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bridge	New Bridge	Westfield River Bridge	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	Lawrence	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	East Milton Decks	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Route 9, Wellesley	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Hobbs Brook	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-95/Route 128, Canton	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 146, Worcester-Millbury	0.0	0.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Crosby Drive/Middlesex Turnpike, Bedford	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-93/MP Interchange, Woburn	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 57 West, Agawam	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Raynham-Middleborough	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 1, I-95 to I-495	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	River Road, Andover/Lawrence	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 6 Cape Double Barrel	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-495/Marlborough Interchange	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 2, Fitchburg/Leominster	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 140, Mansfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44/Samoset Street, Plymouth	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Plymouth	0.0	17.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Boardman Street, East Boston	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Highway	New Capacity	Merrill Road, Pittsfield	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Center and Seymour Streets, Pittsfield	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 128, Randolph/Wellesley	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 3 South (HOV?)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 3 North	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Noise Barriers	Type II, Milton/Quincy	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Upper North Street, Pittsfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Route 140, Franklin	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/Route 114 Interchange, Peabody	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/I-95 Interchange, Sharon	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 125, Wilmington	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 24/Route 140 Interchange, Taunton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 129 Interchange, Wilmington	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2, Concord	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Lexington Marrett Road	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2 Truck Escape Ramps	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 139, Marshfield	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Coltsville Intersection, Pittsfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Routes 7 & 20, Pittsfield	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Shawinigan Drive, Chicopee	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			3.1	22.2	18.5	5.0	4.8	0.2	0.0	0.0	0.0	0.0

SPECIAL PROJECTS

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Project	Classification	Name/Location	Projected ROW Cash Flow – State Share(1992$ – million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Bridge	Major Expansion	Salem-Beverly Bridge	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bridge	New Bridge	Westfield River Bridge	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	Lawrence	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Demonstration	East Milton Decks	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Route 9, Wellesley	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Drainage Improvement	Hobbs Brook	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-95/Route 128, Canton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 146, Worcester-Millbury	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Crosby Drive/Middlesex Turnpike, Bedford	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-93/MP Interchange, Woburn	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 57 West, Agawam	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Raynham-Middleborough	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 1, I-95 to I-495	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	River Road, Andover/Lawrence	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 6 Cape Double Barrel	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	I-495/Marlborough Interchange	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 2, Fitchburg/Leominster	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 140, Mansfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44/Samoset Street, Plymouth	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 44, Plymouth	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Boardman Street, East Boston	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Highway	New Capacity	Merrill Road, Pittsfield	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Center and Seymour Streets, Pittsfield	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 128, Randolph/Wellesley	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 3 South (HOV?)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	New Capacity	Route 3 North	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Noise Barriers	Type II, Milton/Quincy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Upper North Street, Pittsfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Relocation	Route 140, Franklin	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/Route 114 Interchange, Peabody	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 1/I-95 Interchange, Sharon	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 125, Wilmington	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	Route 24/Route 140 Interchange, Taunton	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Revised Interchange	I-93/Route 129 Interchange, Wilmington	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2, Concord	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Lexington Marrett Road	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 2 Truck Escape Ramps	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Route 139, Marshfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Coltsville Intersection, Pittsfield	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Routes 7 & 20, Pittsfield	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Highway	Safety Improvement	Shawinigan Drive, Chicopee	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total			0.9	6.4	5.3	1.5	1.4	0.1	0.0	0.0	0.0	0.0

OTHER COSTS

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	Projected Gross Needs (1992$ – million)											
	State Fiscal Year											
CATEGORY	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	TOTAL
Chapter 90 Local Aid		90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	900.0
PWED Grants		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	100.0
MHD Personnel		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	100.0
Other		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	50.0
Total Costs	0.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	1150.0

OTHER COSTS

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SPENDING CURVE PARAMETERS

CATEGORY	Current Year	Following Year	Projected Gross Cash Flow (1992$ - million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Chapter 90 Local Aid	100%	0%	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
PWED Grants	100%	0%	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
MHD Personnel	100%	0%	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Other	100%	0%	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Total Costs			115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0

OTHER COSTS

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FUNDING SPLIT PARAMETERS

CATEGORY	Effective Federal Share	Effective State Share	Projected Cash Flow - Federal Share(1992$ - million) State Fiscal Year 1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Chapter 90 Local Aid	0%	100%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PWED Grants	0%	100%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MHD Personnel	40%	60%	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Other	0%	100%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Costs			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

OTHER COSTS

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	Projected Cash Flow - State Share(1992$ - million)									
	State Fiscal Year									
CATEGORY	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Chapter 90 Local Aid	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
PWED Grants	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
MHD Personnel	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Other	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Total Costs	111.0	111.0	111.0	111.0	111.0	111.0	111.0	111.0	111.0	111.0

COMMITTED PROJECTS

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Name/Location	Contract #	Construction Cost ($ – million)	Remaining Cost %	Remaining Cost ($ – million)	Start Date	Estimated Completion Date	Effective Federal Share
Route 57 Phase 1, Agawam	91512	17.6	63.00%	11.1	04/09/91	11/23/93	75.00%
Chicopee River Bridge, Chicopee	92267	4.9	80.00%	3.9	11/12/91	11/26/93	0.00%
Route 2, Harvard et. al.	91357	18.2	63.00%	11.5	11/13/90	11/27/93	75.00%
Parking Facility, Lawrence	91165	5.0	19.00%	1.0	10/05/90	07/31/92	75.00%
Mill Creek Drainage, Chelsea		6.2	100.00%	6.2	On–Hold	On–Hold	0.00%
CANA	91569	6.8	77.00%	5.3	05/17/91	09/07/93	90.00%
CANA	91399	6.8	16.00%	1.1	12/27/90	12/31/92	90.00%
CANA	89275	186.3	19.00%	35.4	08/10/89	11/27/93	90.00%
Total		251.9		75.4			

COMMITTED PROJECTS

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Name/Location	Projected Gross Cash Flow($ - million) State Fiscal Year 1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Route 57 Phase 1, Agawam	3.2	5.5	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chicopee River Bridge, Chicopee	1.0	2.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Route 2, Harvard et. al.	3.6	5.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parking Facility, Lawrence	0.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mill Creek Drainage, Chelsea											
CANA	2.2	3.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CANA	0.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CANA	26.1	7.3	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	37.2	25.1	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

COMMITTED PROJECTS

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Name/Location	Projected Cash Flow – Federal Share($ – million) State Fiscal Year 1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Route 57 Phase 1, Agawam	2.4	4.1	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chicopee River Bridge, Chicopee	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Route 2, Harvard et. al.	2.7	4.4	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parking Facility, Lawrence	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mill Creek Drainage, Chelsea											
CANA	2.0	2.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CANA	0.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CANA	23.5	6.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	31.5	18.6	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

COMMITTED PROJECTS

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Name/Location	Projected Cash Flow – State Share($ – million) State Fiscal Year 1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Route 57 Phase 1, Agawam	0.8	1.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chicopee River Bridge, Chicopee	1.0	2.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Route 2, Harvard et. al.	0.9	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parking Facility, Lawrence	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mill Creek Drainage, Chelsea											
CANA	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CANA	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CANA	2.6	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	5.8	6.5	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Bridge File

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BRIDGE RECAPITALIZATION MODEL – ASSUMPTIONS

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1. Maintenance, rehabilitation, and replacement costs (construction costs) were projected using a life cycle model and the bridge inventory database.

2. The life cycle model was developed based on available FHWA and other research information as well as on inputs received from MHD.

3. The model is intended to simulate the timing and costs associated with major bridge activities.

4. The current set of parameters are set based on a long–term objective of gradually improving the existing condition level over a period of time.

5. The necessary cost parameters (cost %s, construction cost/sf) were developed based on available FHWA and other research information as well as on inputs received from MHD.

6. The construction cost/sf parameter "drives" all major activity costs –– this parameter includes a cost multiplier to capture additional construction period costs.

7. An expansion factor pararmeter is included to capture the average square footage impact of lengthening and widening a bridge at replacement.

8. To "calibrate" the model, a condition rating simulation component was added –– this component was used to check the overall reasonableness of the model outputs (average condition rating, rating at time of rehabilitation, rating at time of replacement).

   The overall goal was to ensure that the model would meet the long–term objective of improving the existing condition level.

   The rating change parameters were developed based on available FHWA and other research information as well as on inputs received from MHD.

9. The bridge inventory database was provided by MHD: "# of bridges" – those bridges for which MHD has rehabilitation/replacement responsibility; "# of MHD bridges" – those bridges for which MHD has maintenance responsibility; "avg size" – average square footage.

10. Design (PE) and ROW costs (non–construction costs) were projected based on a % of unit construction cost; these parameters were provided by MHD.

11. The design costs are based on next year's construction needs; ROW costs are based on the current year's construction needs.

12. Given that bridges are to replaced after 65 years in the current model, backlog needs were determined by totaling the needs associated with all bridges older than 65 years –– all of these bridges were assumed to be replaced and the cost was spread evenly over the planning period.

BRIDGE RECAPITALIZATION SUMMARY

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	Projected Gross Needs (1992$ – million)												
		State Fiscal Year											
CATEGORY	BACKLOG	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	TOTAL
– Maintenance		12.9	12.8	13.2	13.8	14.3	14.8	15.7	16.3	16.2	17.6	18.3	165.7
– Rehabilitation		42.7	85.3	123.0	114.8	99.6	108.7	80.3	65.1	181.9	97.0	63.5	1062.0
– Replacement		19.1	35.8	25.2	85.4	84.3	60.9	27.1	26.6	51.6	94.4	140.9	651.1
Subtotal Construction		74.6	133.9	161.4	214.0	198.1	184.4	123.1	108.0	249.6	209.0	222.6	1878.8
– Design (PE)													
– Rehabilitation		5.7	8.3	7.7	6.7	7.3	5.4	4.4	12.2	6.5	4.3	2.5	71.2
– Replacement		3.6	2.5	8.6	8.5	6.2	2.7	2.7	5.2	9.5	14.2	12.1	76.0
– ROW		0.4	0.7	0.5	1.7	1.7	1.2	0.5	0.5	1.0	1.9	2.8	13.2
Total On-Going Costs		84.4	145.4	178.3	230.9	213.3	193.8	130.7	126.0	266.7	229.4	240.1	2039.1
– Backlog Replacement	457.2		45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	457.2
– Backlog Design (PE)	46.2		4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	46.2
– Backlog ROW	9.2		0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	9.2
– Backlog Maintenance	4.0		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	4.0
Total Backlog Costs	516.7		51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	51.7	516.7
Total Bridge Program		84.4	197.1	230.0	282.6	264.9	245.5	182.4	177.7	318.4	281.1	291.8	2555.8

DETAILED SCHEDULES & COSTS

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LIFE CYCLE PARAMETERS

MAJOR ACTIVITY PROFILE	TIMING	COST %	CONSTRUCTION COST/SF	EXPANSION FACTOR	RATING CHANGE
1. Maintenance	every year	0.50% (of rehabilitation cost)			-0.0100
2. Rehabilitation	35	40.00% (of replacement cost)			0.9000
3. Maintenance	every year	0.50% (of replacement cost)			-0.0150
4. Replacement	65	100.00% (of original cost)	$205	1.33	1.0000

OTHER COST PARAMETERS

Construction	
- Avg. Unit Cost/SF	$138
- Cost Multiplier	1.49
Design (PE)	
- Rehabilitation	10.00% (of unit construction cost)
- Replacement	15.00% (of unit construction cost)
ROW	
- Replacement	3.00% (of unit construction cost)

BRIDGE INVENTORY DATA

REHABILITATION & REPLACEMENT TIMING

YEAR BUILT	# OF BRIDGES	# OF MHD BRIDGES	AVG SIZE	TOTAL SIZE	REHAB #1	REPLACE #1	REHAB #2	REPLACE #2
1892	0	0	0	0	1927	1957	1992	2022
1893	0	0	0	0	1928	1958	1993	2023
1894	1	0	5670	5670	1929	1959	1994	2024
1895	5	4	3068	15340	1930	1960	1995	2025
1896	4	3	2827	11308	1931	1961	1996	2026
1897	3	3	4798	14394	1932	1962	1997	2027
1898	1	1	3658	3658	1933	1963	1998	2028
1899	5	3	3798	18990	1934	1964	1999	2029
1900	6	4	2329	13974	1935	1965	2000	2030
1901	9	4	3291	29619	1936	1966	2001	2031
1902	5	1	1924	9620	1937	1967	2002	2032
1903	3	3	2008	6024	1938	1968	2003	2033
1904	15	5	2115	31725	1939	1969	2004	2034
1905	10	5	2099	20990	1940	1970	2005	2035
1906	9	6	8427	75843	1941	1971	2006	2036
1907	17	7	6993	118881	1942	1972	2007	2037
1908	7	3	3413	23891	1943	1973	2008	2038
1909	12	6	2517	30204	1944	1974	2009	2039
1910	21	6	2010	42210	1945	1975	2010	2040
1911	10	8	5518	55180	1946	1976	2011	2041
1912	11	3	4750	52250	1947	1977	2012	2042
1913	16	7	3058	48928	1948	1978	2013	2043
1914	12	6	6603	79236	1949	1979	2014	2044
1915	14	4	3511	49154	1950	1980	2015	2045
1916	8	5	7233	57864	1951	1981	2016	2046
1917	14	8	3058	42812	1952	1982	2017	2047
1918	16	8	3159	50544	1953	1983	2018	2048
1919	9	3	5422	48798	1954	1984	2019	2049
1920	23	6	1524	35052	1955	1985	2020	2050
1921	26	12	4006	104156	1956	1986	2021	2051
1922	23	14	8837	203251	1957	1987	2022	2052
1923	16	8	2149	34384	1958	1988	2023	2053
1924	32	18	5022	160704	1959	1989	2024	2054
1925	22	8	4574	100628	1960	1990	2025	2055
1926	30	21	2702	81060	1961	1991	2026	2056
1927	31	15	2253	69843	1962	1992	2027	2057
1928	34	17	3856	131104	1963	1993	2028	2058
1929	23	13	4020	92460	1964	1994	2029	2059
1930	83	34	3772	313076	1965	1995	2030	2060
1931	60	53	5149	308940	1966	1996	2031	2061
1932	46	39	4854	223284	1967	1997	2032	2062
1933	23	11	4318	99314	1968	1998	2033	2063
1934	30	15	3245	97350	1969	1999	2034	2064
1935	39	14	4849	189111	1970	2000	2035	2065
1936	43	16	8050	346150	1971	2001	2036	2066
1937	93	39	5555	516615	1972	2002	2037	2067
1938	142	33	3098	439916	1973	2003	2038	2068
1939	138	16	1917	264546	1974	2004	2039	2069
1940	86	22	1832	157552	1975	2005	2040	2070
1941	29	19	5877	170433	1976	2006	2041	2071

BRIDGE INVENTORY DATA

REHABILITATION & REPLACEMENT TIMING

YEAR BUILT	# OF BRIDGES	# OF MHD BRIDGES	AVG SIZE	TOTAL SIZE	REHAB #1	REPLACE #1	REHAB #2	REPLACE #2
1942	9	6	2523	22707	1977	2007	2042	2072
1943	6	2	7684	46104	1978	2008	2043	2073
1944	5	1	2880	14400	1979	2009	2044	2074
1945	10	3	4186	41860	1980	2010	2045	2075
1946	16	4	3317	53072	1981	2011	2046	2076
1947	31	25	3937	122047	1982	2012	2047	2077
1948	25	17	4034	100850	1983	2013	2048	2078
1949	47	21	5004	235188	1984	2014	2049	2079
1950	83	51	11887	986621	1985	2015	2050	2080
1951	62	40	7793	483166	1986	2016	2051	2081
1952	41	27	4199	172159	1987	2017	2052	2082
1953	67	49	6710	449570	1988	2018	2053	2083
1954	90	62	8461	761490	1989	2019	2054	2084
1955	81	54	6633	537273	1990	2020	2055	2085
1956	217	69	6234	1352778	1991	2021	2056	2086
1957	93	55	5602	520986	1992	2022	2057	2087
1958	120	97	8676	1041120	1993	2023	2058	2088
1959	160	119	9381	1500960	1994	2024	2059	2089
1960	115	92	12182	1400930	1995	2025	2060	2090
1961	124	109	9794	1214456	1996	2026	2061	2091
1962	116	101	11430	1325880	1997	2027	2062	2092
1963	111	99	8826	979686	1998	2028	2063	2093
1964	78	65	10188	794664	1999	2029	2064	2094
1965	142	121	15624	2218608	2000	2030	2065	2095
1966	93	86	12728	1183704	2001	2031	2066	2096
1967	94	82	8235	774090	2002	2032	2067	2097
1968	53	41	8653	458609	2003	2033	2068	2098
1969	69	57	9844	679236	2004	2034	2069	2099
1970	88	66	19792	1741696	2005	2035	2070	2100
1971	42	29	14006	588252	2006	2036	2071	2101
1972	34	22	7120	242080	2007	2037	2072	2102
1973	47	30	14644	688268	2008	2038	2073	2103
1974	39	33	11727	457353	2009	2039	2074	2104
1975	44	32	9258	407352	2010	2040	2075	2105
1976	77	60	11001	847077	2011	2041	2076	2106
1977	70	62	15515	1086050	2012	2042	2077	2107
1978	87	68	8064	701568	2013	2043	2078	2108
1979	64	53	11541	738624	2014	2044	2079	2109
1980	35	25	13743	481005	2015	2045	2080	2110
1981	35	21	17150	600250	2016	2046	2081	2111
1982	49	30	15533	761117	2017	2047	2082	2112
1983	48	28	8933	428784	2018	2048	2083	2113
1984	57	40	12845	732165	2019	2049	2084	2114
1985	48	26	5665	271920	2020	2050	2085	2115
1986	43	30	6936	298248	2021	2051	2086	2116
1987	43	33	6874	295582	2022	2052	2087	2117
1988	46	24	5594	257324	2023	2053	2088	2118
1989	22	6	4118	90596	2024	2054	2089	2119
1990	21	10	14917	313257	2025	2055	2090	2120
1991	11	7	16920	186120	2026	2056	2091	2121
TOTAL	4523	2849	8132	36782938				
BACKLOG	415	203	4039	1676342				

CONDITION RATING SIMULATION (0–100 scale)

YEAR BUILT	State Fiscal Year											
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1892	0.900	0.885	0.870	0.855	0.840	0.825	0.810	0.795	0.780	0.765	0.750	0.735
1893	0.660	0.900	0.885	0.870	0.855	0.840	0.825	0.810	0.795	0.780	0.765	0.750
1894	0.670	0.660	0.900	0.885	0.870	0.855	0.840	0.825	0.810	0.795	0.780	0.765
1895	0.680	0.670	0.660	0.900	0.885	0.870	0.855	0.840	0.825	0.810	0.795	0.780
1896	0.690	0.680	0.670	0.660	0.900	0.885	0.870	0.855	0.840	0.825	0.810	0.795
1897	0.700	0.690	0.680	0.670	0.660	0.900	0.885	0.870	0.855	0.840	0.825	0.810
1898	0.710	0.700	0.690	0.680	0.670	0.660	0.900	0.885	0.870	0.855	0.840	0.825
1899	0.720	0.710	0.700	0.690	0.680	0.670	0.660	0.900	0.885	0.870	0.855	0.840
1900	0.730	0.720	0.710	0.700	0.690	0.680	0.670	0.660	0.900	0.885	0.870	0.855
1901	0.740	0.730	0.720	0.710	0.700	0.690	0.680	0.670	0.660	0.900	0.885	0.870
1902	0.750	0.740	0.730	0.720	0.710	0.700	0.690	0.680	0.670	0.660	0.900	0.885
1903	0.760	0.750	0.740	0.730	0.720	0.710	0.700	0.690	0.680	0.670	0.660	0.900
1904	0.770	0.760	0.750	0.740	0.730	0.720	0.710	0.700	0.690	0.680	0.670	0.660
1905	0.780	0.770	0.760	0.750	0.740	0.730	0.720	0.710	0.700	0.690	0.680	0.670
1906	0.790	0.780	0.770	0.760	0.750	0.740	0.730	0.720	0.710	0.700	0.690	0.680
1907	0.800	0.790	0.780	0.770	0.760	0.750	0.740	0.730	0.720	0.710	0.700	0.690
1908	0.810	0.800	0.790	0.780	0.770	0.760	0.750	0.740	0.730	0.720	0.710	0.700
1909	0.820	0.810	0.800	0.790	0.780	0.770	0.760	0.750	0.740	0.730	0.720	0.710
1910	0.830	0.820	0.810	0.800	0.790	0.780	0.770	0.760	0.750	0.740	0.730	0.720
1911	0.840	0.830	0.820	0.810	0.800	0.790	0.780	0.770	0.760	0.750	0.740	0.730
1912	0.850	0.840	0.830	0.820	0.810	0.800	0.790	0.780	0.770	0.760	0.750	0.740
1913	0.860	0.850	0.840	0.830	0.820	0.810	0.800	0.790	0.780	0.770	0.760	0.750
1914	0.870	0.860	0.850	0.840	0.830	0.820	0.810	0.800	0.790	0.780	0.770	0.760
1915	0.880	0.870	0.860	0.850	0.840	0.830	0.820	0.810	0.800	0.790	0.780	0.770
1916	0.890	0.880	0.870	0.860	0.850	0.840	0.830	0.820	0.810	0.800	0.790	0.780
1917	0.900	0.890	0.880	0.870	0.860	0.850	0.840	0.830	0.820	0.810	0.800	0.790
1918	0.910	0.900	0.890	0.880	0.870	0.860	0.850	0.840	0.830	0.820	0.810	0.800
1919	0.920	0.910	0.900	0.890	0.880	0.870	0.860	0.850	0.840	0.830	0.820	0.810
1920	0.930	0.920	0.910	0.900	0.890	0.880	0.870	0.860	0.850	0.840	0.830	0.820
1921	0.940	0.930	0.920	0.910	0.900	0.890	0.880	0.870	0.860	0.850	0.840	0.830
1922	0.950	0.940	0.930	0.920	0.910	0.900	0.890	0.880	0.870	0.860	0.850	0.840
1923	0.960	0.950	0.940	0.930	0.920	0.910	0.900	0.890	0.880	0.870	0.860	0.850
1924	0.970	0.960	0.950	0.940	0.930	0.920	0.910	0.900	0.890	0.880	0.870	0.860
1925	0.980	0.970	0.960	0.950	0.940	0.930	0.920	0.910	0.900	0.890	0.880	0.870
1926	0.990	0.980	0.970	0.960	0.950	0.940	0.930	0.920	0.910	0.900	0.890	0.880
1927	1.000	0.990	0.980	0.970	0.960	0.950	0.940	0.930	0.920	0.910	0.900	0.890
1928	0.465	1.000	0.990	0.980	0.970	0.960	0.950	0.940	0.930	0.920	0.910	0.900
1929	0.480	0.465	1.000	0.990	0.980	0.970	0.960	0.950	0.940	0.930	0.920	0.910
1930	0.495	0.480	0.465	1.000	0.990	0.980	0.970	0.960	0.950	0.940	0.930	0.920
1931	0.510	0.495	0.480	0.465	1.000	0.990	0.980	0.970	0.960	0.950	0.940	0.930
1932	0.525	0.510	0.495	0.480	0.465	1.000	0.990	0.980	0.970	0.960	0.950	0.940
1933	0.540	0.525	0.510	0.495	0.480	0.465	1.000	0.990	0.980	0.970	0.960	0.950
1934	0.555	0.540	0.525	0.510	0.495	0.480	0.465	1.000	0.990	0.980	0.970	0.960
1935	0.570	0.555	0.540	0.525	0.510	0.495	0.480	0.465	1.000	0.990	0.980	0.970
1936	0.585	0.570	0.555	0.540	0.525	0.510	0.495	0.480	0.465	1.000	0.990	0.980
1937	0.600	0.585	0.570	0.555	0.540	0.525	0.510	0.495	0.480	0.465	1.000	0.990
1938	0.615	0.600	0.585	0.570	0.555	0.540	0.525	0.510	0.495	0.480	0.465	1.000
1939	0.630	0.615	0.600	0.585	0.570	0.555	0.540	0.525	0.510	0.495	0.480	0.465
1940	0.645	0.630	0.615	0.600	0.585	0.570	0.555	0.540	0.525	0.510	0.495	0.480
1941	0.660	0.645	0.630	0.615	0.600	0.585	0.570	0.555	0.540	0.525	0.510	0.495

CONDITION RATING SIMULATION (0–100 scale)

YEAR BUILT	State Fiscal Year											
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1942	0.675	0.660	0.645	0.630	0.615	0.600	0.585	0.570	0.555	0.540	0.525	0.510
1943	0.690	0.675	0.660	0.645	0.630	0.615	0.600	0.585	0.570	0.555	0.540	0.525
1944	0.705	0.690	0.675	0.660	0.645	0.630	0.615	0.600	0.585	0.570	0.555	0.540
1945	0.720	0.705	0.690	0.675	0.660	0.645	0.630	0.615	0.600	0.585	0.570	0.555
1946	0.735	0.720	0.705	0.690	0.675	0.660	0.645	0.630	0.615	0.600	0.585	0.570
1947	0.750	0.735	0.720	0.705	0.690	0.675	0.660	0.645	0.630	0.615	0.600	0.585
1948	0.765	0.750	0.735	0.720	0.705	0.690	0.675	0.660	0.645	0.630	0.615	0.600
1949	0.780	0.765	0.750	0.735	0.720	0.705	0.690	0.675	0.660	0.645	0.630	0.615
1950	0.795	0.780	0.765	0.750	0.735	0.720	0.705	0.690	0.675	0.660	0.645	0.630
1951	0.810	0.795	0.780	0.765	0.750	0.735	0.720	0.705	0.690	0.675	0.660	0.645
1952	0.825	0.810	0.795	0.780	0.765	0.750	0.735	0.720	0.705	0.690	0.675	0.660
1953	0.840	0.825	0.810	0.795	0.780	0.765	0.750	0.735	0.720	0.705	0.690	0.675
1954	0.855	0.840	0.825	0.810	0.795	0.780	0.765	0.750	0.735	0.720	0.705	0.690
1955	0.870	0.855	0.840	0.825	0.810	0.795	0.780	0.765	0.750	0.735	0.720	0.705
1956	0.885	0.870	0.855	0.840	0.825	0.810	0.795	0.780	0.765	0.750	0.735	0.720
1957	0.900	0.885	0.870	0.855	0.840	0.825	0.810	0.795	0.780	0.765	0.750	0.735
1958	0.660	0.900	0.885	0.870	0.855	0.840	0.825	0.810	0.795	0.780	0.765	0.750
1959	0.670	0.660	0.900	0.885	0.870	0.855	0.840	0.825	0.810	0.795	0.780	0.765
1960	0.680	0.670	0.660	0.900	0.885	0.870	0.855	0.840	0.825	0.810	0.795	0.780
1961	0.690	0.680	0.670	0.660	0.900	0.885	0.870	0.855	0.840	0.825	0.810	0.795
1962	0.700	0.690	0.680	0.670	0.660	0.900	0.885	0.870	0.855	0.840	0.825	0.810
1963	0.710	0.700	0.690	0.680	0.670	0.660	0.900	0.885	0.870	0.855	0.840	0.825
1964	0.720	0.710	0.700	0.690	0.680	0.670	0.660	0.900	0.885	0.870	0.855	0.840
1965	0.730	0.720	0.710	0.700	0.690	0.680	0.670	0.660	0.900	0.885	0.870	0.855
1966	0.740	0.730	0.720	0.710	0.700	0.690	0.680	0.670	0.660	0.900	0.885	0.870
1967	0.750	0.740	0.730	0.720	0.710	0.700	0.690	0.680	0.670	0.660	0.900	0.885
1968	0.760	0.750	0.740	0.730	0.720	0.710	0.700	0.690	0.680	0.670	0.660	0.900
1969	0.770	0.760	0.750	0.740	0.730	0.720	0.710	0.700	0.690	0.680	0.670	0.660
1970	0.780	0.770	0.760	0.750	0.740	0.730	0.720	0.710	0.700	0.690	0.680	0.670
1971	0.790	0.780	0.770	0.760	0.750	0.740	0.730	0.720	0.710	0.700	0.690	0.680
1972	0.800	0.790	0.780	0.770	0.760	0.750	0.740	0.730	0.720	0.710	0.700	0.690
1973	0.810	0.800	0.790	0.780	0.770	0.760	0.750	0.740	0.730	0.720	0.710	0.700
1974	0.820	0.810	0.800	0.790	0.780	0.770	0.760	0.750	0.740	0.730	0.720	0.710
1975	0.830	0.820	0.810	0.800	0.790	0.780	0.770	0.760	0.750	0.740	0.730	0.720
1976	0.840	0.830	0.820	0.810	0.800	0.790	0.780	0.770	0.760	0.750	0.740	0.730
1977	0.850	0.840	0.830	0.820	0.810	0.800	0.790	0.780	0.770	0.760	0.750	0.740
1978	0.860	0.850	0.840	0.830	0.820	0.810	0.800	0.790	0.780	0.770	0.760	0.750
1979	0.870	0.860	0.850	0.840	0.830	0.820	0.810	0.800	0.790	0.780	0.770	0.760
1980	0.880	0.870	0.860	0.850	0.840	0.830	0.820	0.810	0.800	0.790	0.780	0.770
1981	0.890	0.880	0.870	0.860	0.850	0.840	0.830	0.820	0.810	0.800	0.790	0.780
1982	0.900	0.890	0.880	0.870	0.860	0.850	0.840	0.830	0.820	0.810	0.800	0.790
1983	0.910	0.900	0.890	0.880	0.870	0.860	0.850	0.840	0.830	0.820	0.810	0.800
1984	0.920	0.910	0.900	0.890	0.880	0.870	0.860	0.850	0.840	0.830	0.820	0.810
1985	0.930	0.920	0.910	0.900	0.890	0.880	0.870	0.860	0.850	0.840	0.830	0.820
1986	0.940	0.930	0.920	0.910	0.900	0.890	0.880	0.870	0.860	0.850	0.840	0.830
1987	0.950	0.940	0.930	0.920	0.910	0.900	0.890	0.880	0.870	0.860	0.850	0.840
1988	0.960	0.950	0.940	0.930	0.920	0.910	0.900	0.890	0.880	0.870	0.860	0.850
1989	0.970	0.960	0.950	0.940	0.930	0.920	0.910	0.900	0.890	0.880	0.870	0.860
1990	0.980	0.970	0.960	0.950	0.940	0.930	0.920	0.910	0.900	0.890	0.880	0.870
1991	0.990	0.980	0.970	0.960	0.950	0.940	0.930	0.920	0.910	0.900	0.890	0.880
TOTAL	0.7848	0.7837	0.7826	0.7814	0.7802	0.7790	0.7777	0.7764	0.7750	0.7735	0.7720	0.7704

MAINTENANCE SCHEDULE & COSTS (1992$ – million)

YEAR BUILT	State Fiscal Year 1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1927	0.000	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018
1928	0.067	0.000	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036
1929	0.054	0.054	0.000	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029
1930	0.131	0.131	0.131	0.000	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
1931	0.280	0.280	0.280	0.280	0.000	0.149	0.149	0.149	0.149	0.149	0.149	0.149
1932	0.194	0.194	0.194	0.194	0.194	0.000	0.103	0.103	0.103	0.103	0.103	0.103
1933	0.049	0.049	0.049	0.049	0.049	0.049	0.000	0.026	0.026	0.026	0.026	0.026
1934	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.000	0.027	0.027	0.027	0.027
1935	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.000	0.037	0.037	0.037
1936	0.132	0.132	0.132	0.132	0.132	0.132	0.132	0.132	0.132	0.000	0.070	0.070
1937	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.000	0.118
1938	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.105	0.000
1939	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
1940	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041
1941	0.114	0.114	0.114	0.114	0.114	0.114	0.114	0.114	0.114	0.114	0.114	0.114

MAINTENANCE SCHEDULE & COSTS (1992$ – million)

YEAR BUILT	State Fiscal Year 1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1942	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
1943	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
1944	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
1945	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
1946	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
1947	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101	0.101
1948	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070	0.070
1949	0.108	0.108	0.108	0.108	0.108	0.108	0.108	0.108	0.108	0.108	0.108	0.108
1950	0.621	0.621	0.621	0.621	0.621	0.621	0.621	0.621	0.621	0.621	0.621	0.621
1951	0.319	0.319	0.319	0.319	0.319	0.319	0.319	0.319	0.319	0.319	0.319	0.319
1952	0.116	0.116	0.116	0.116	0.116	0.116	0.116	0.116	0.116	0.116	0.116	0.116
1953	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337	0.337
1954	0.538	0.538	0.538	0.538	0.538	0.538	0.538	0.538	0.538	0.538	0.538	0.538
1955	0.367	0.367	0.367	0.367	0.367	0.367	0.367	0.367	0.367	0.367	0.367	0.367
1956	0.441	0.441	0.441	0.441	0.441	0.441	0.441	0.441	0.441	0.441	0.441	0.441
1957	0.000	0.316	0.316	0.316	0.316	0.316	0.316	0.316	0.316	0.316	0.316	0.316
1958	0.345	0.000	0.862	0.862	0.862	0.862	0.862	0.862	0.862	0.862	0.862	0.862
1959	0.458	0.458	0.000	1.144	1.144	1.144	1.144	1.144	1.144	1.144	1.144	1.144
1960	0.459	0.459	0.459	0.000	1.148	1.148	1.148	1.148	1.148	1.148	1.148	1.148
1961	0.438	0.438	0.438	0.438	0.000	1.094	1.094	1.094	1.094	1.094	1.094	1.094
1962	0.473	0.473	0.473	0.473	0.473	0.000	1.183	1.183	1.183	1.183	1.183	1.183
1963	0.358	0.358	0.358	0.358	0.358	0.358	0.000	0.895	0.895	0.895	0.895	0.895
1964	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.000	0.679	0.679	0.679	0.679
1965	0.775	0.775	0.775	0.775	0.775	0.775	0.775	0.775	0.000	1.937	1.937	1.937
1966	0.449	0.449	0.449	0.449	0.449	0.449	0.449	0.449	0.449	0.000	1.122	1.122
1967	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.277	0.000	0.692
1968	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.000
1969	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230
1970	0.535	0.535	0.535	0.535	0.535	0.535	0.535	0.535	0.535	0.535	0.535	0.535
1971	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.166
1972	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
1973	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180
1974	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159	0.159
1975	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121	0.121
1976	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271
1977	0.394	0.394	0.394	0.394	0.394	0.394	0.394	0.394	0.394	0.394	0.394	0.394
1978	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225
1979	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251	0.251
1980	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141
1981	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
1982	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191
1983	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103
1984	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211
1985	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060
1986	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085
1987	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093
1988	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055	0.055
1989	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
1990	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061	0.061
1991	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.049
TOTAL	$12.868	$12.790	$13.177	$13.759	$14.260	$14.836	$15.715	$16.315	$16.176	$17.569	$18.262	$18.822

REHABILITATION SCHEDULE & COSTS (1992$ – million)

YEAR BUILT	State Fiscal Year 1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1929	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1930	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1931	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1933	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1934	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1935	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1936	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1937	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1938	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1939	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1940	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1941	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

REHABILITATION SCHEDULE & COSTS (1992$ – million)

YEAR BUILT	State Fiscal Year 1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1942	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1943	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1944	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1945	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1946	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1947	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1948	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1949	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1951	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1952	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1953	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1954	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1955	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1956	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1957	42.706	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1958	0.000	85.343	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1959	0.000	0.000	123.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1960	0.000	0.000	0.000	114.837	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1961	0.000	0.000	0.000	0.000	99.551	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1962	0.000	0.000	0.000	0.000	0.000	108.685	0.000	0.000	0.000	0.000	0.000	0.000
1963	0.000	0.000	0.000	0.000	0.000	0.000	80.307	0.000	0.000	0.000	0.000	0.000
1964	0.000	0.000	0.000	0.000	0.000	0.000	0.000	65.140	0.000	0.000	0.000	0.000
1965	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	181.864	0.000	0.000	0.000
1966	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	97.031	0.000	0.000
1967	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	63.454	0.000
1968	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	37.593
1969	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1970	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1971	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1972	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1973	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1974	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1975	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1976	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1977	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1978	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1979	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1980	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1985	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1986	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1987	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1988	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1989	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1990	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1991	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	$42.706	$85.343	$123.037	$114.837	$99.551	$108.685	$80.307	$65.140	$181.864	$97.031	$63.454	$37.593

REPLACEMENT SCHEDULE & COSTS (1992$ – million)

YEAR BUILT	State Fiscal Year 1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1927	19.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1928	0.000	35.760	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1929	0.000	0.000	25.220	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1930	0.000	0.000	0.000	85.395	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1931	0.000	0.000	0.000	0.000	84.267	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1932	0.000	0.000	0.000	0.000	0.000	60.903	0.000	0.000	0.000	0.000	0.000	0.000
1933	0.000	0.000	0.000	0.000	0.000	0.000	27.089	0.000	0.000	0.000	0.000	0.000
1934	0.000	0.000	0.000	0.000	0.000	0.000	0.000	26.553	0.000	0.000	0.000	0.000
1935	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	51.582	0.000	0.000	0.000
1936	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	94.417	0.000	0.000
1937	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	140.913	0.000
1938	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	119.992
1939	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1940	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1941	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

REPLACEMENT SCHEDULE & COSTS (1992$ – million)

YEAR BUILT	State Fiscal Year 1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
1942	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1943	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1944	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1945	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1946	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1947	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1948	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1949	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1951	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1952	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1953	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1954	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1955	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1956	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1957	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1958	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1959	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1960	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1961	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1962	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1963	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1964	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1965	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1966	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1967	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1968	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1969	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1970	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1971	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1972	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1973	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1974	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1975	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1976	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1977	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1978	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1979	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1980	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1981	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1982	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1984	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1985	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1986	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1987	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1988	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1989	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1990	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1991	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	$19.051	$35.760	$25.220	$85.395	$84.267	$60.903	$27.089	$26.553	$51.582	$94.417	$140.913	$119.992

Assumptions File

Complete Printout

EOTC Financial Model
Assumptions Worksheet

Inflation

Inflation Flag 1 (0=off,1=on)

	Historical Years				Base Year	Projected Years																		
1992 Base Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Capital																									
Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Factor	0.87	0.90	0.93	0.97	1.00	1.04	1.07	1.11	1.15	1.19	1.23	1.27	1.32	1.36	1.41	1.46	1.51	1.56	1.62	1.68	1.73	1.79	1.86	1.92	1.99
Operating																									
Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Factor	0.87	0.90	0.93	0.97	1.00	1.04	1.07	1.11	1.15	1.19	1.23	1.27	1.32	1.36	1.41	1.46	1.51	1.56	1.62	1.68	1.73	1.79	1.86	1.92	1.99

EOTC Financial Model
Assumptions Worksheet

MHD Project Spending Curve Table

Note: Unshaded=flat spending, Shaded=curved spending

PROJECT DURATION	CURVE CODE	PROJECT YEAR 1	2	3	4	5	6	7	8	9	10	TOTAL
1	1	100%										100%
2	2	50%	50%									100%
3	3	34%	33%	33%								100%
4	4	25%	25%	25%	25%							100%
5	5	20%	20%	20%	20%	20%						100%
1	11	100%										100%
2	12	65%	35%									100%
3	13	45%	45%	10%								100%
4	14	20%	40%	30%	10%							100%
5	15	20%	40%	20%	10%	10%						100%

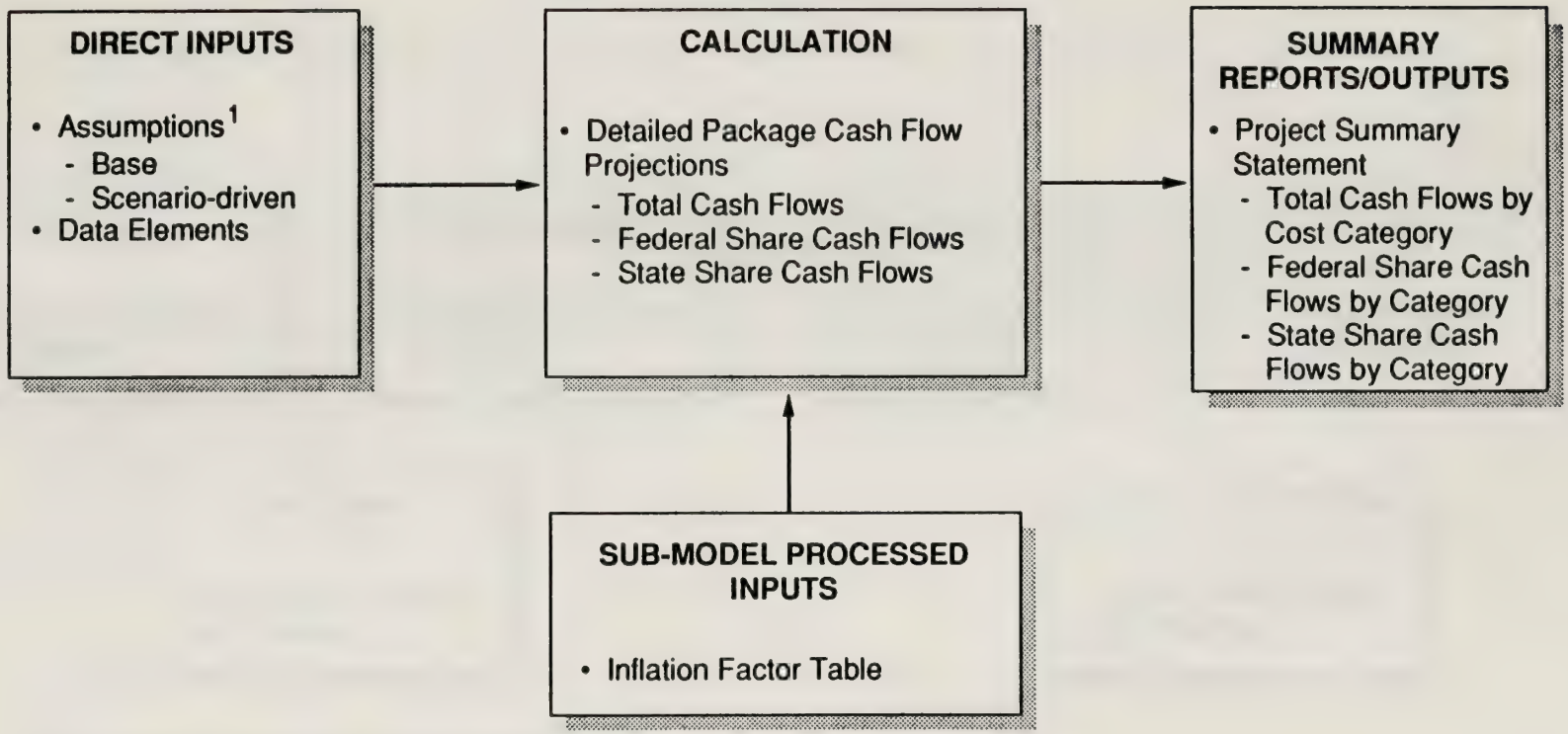
Commonwealth of Massachusetts, Executive Office of Transportation and Construction

CA/T Financial Planning and Analysis Module

Documentation and User Training Package

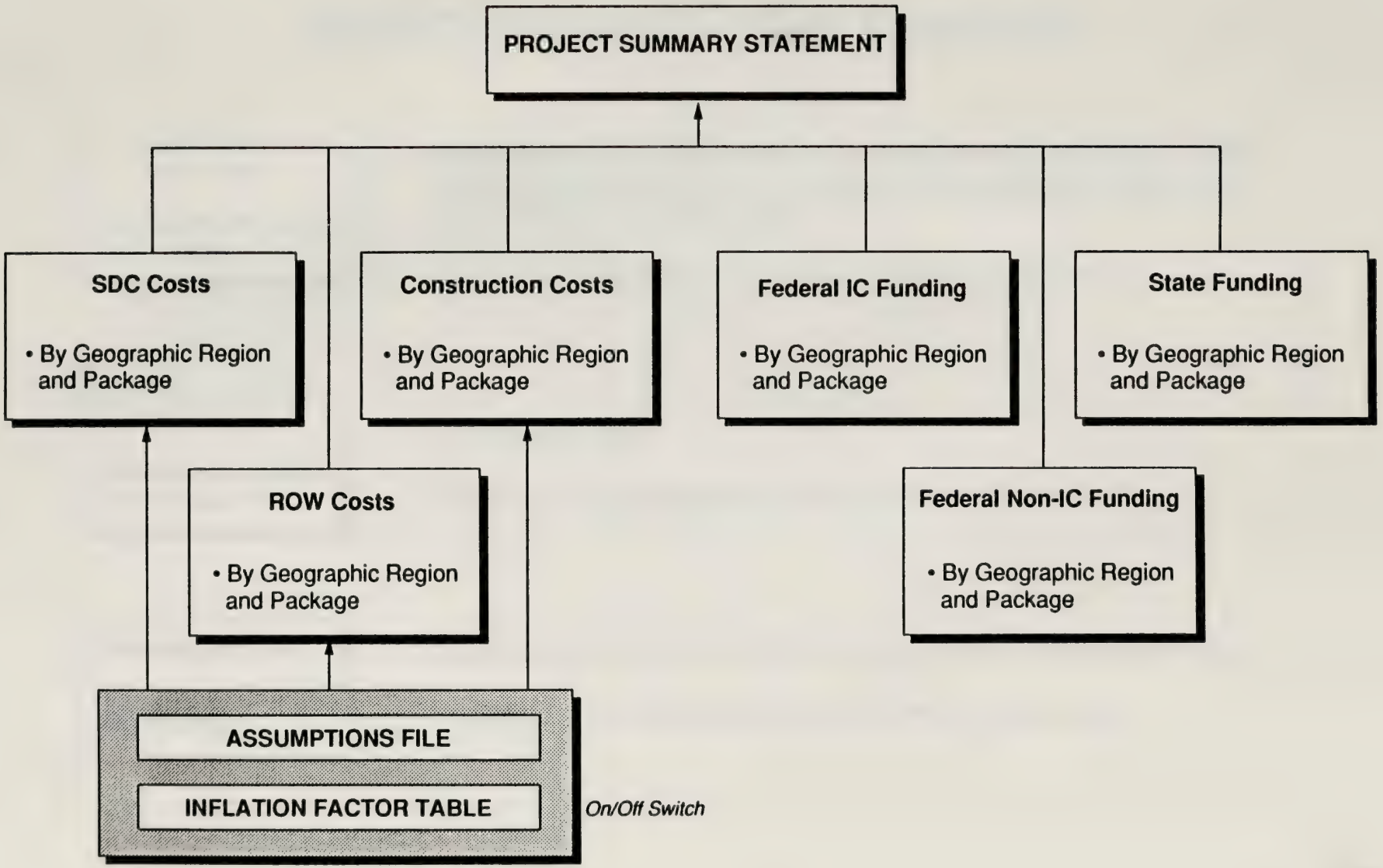
Deloitte & Touche

Functional Overview of the CA/T Module



1. Assumptions are explained in detail on the Assumptions page of the model printout.

Operational Overview of the CA/T Module





Project Summary Statement

Major Components -- Cost Categories

SDC Costs

- By Geographic Region and Package

- Section design costs; includes management consulting costs, construction support costs, design force account costs, and geotechnical services costs
- Package cash flows link to the summary statement

ROW Costs

- By Geographic Region and Package

- ROW costs only
- Package cash flows link to the summary statement

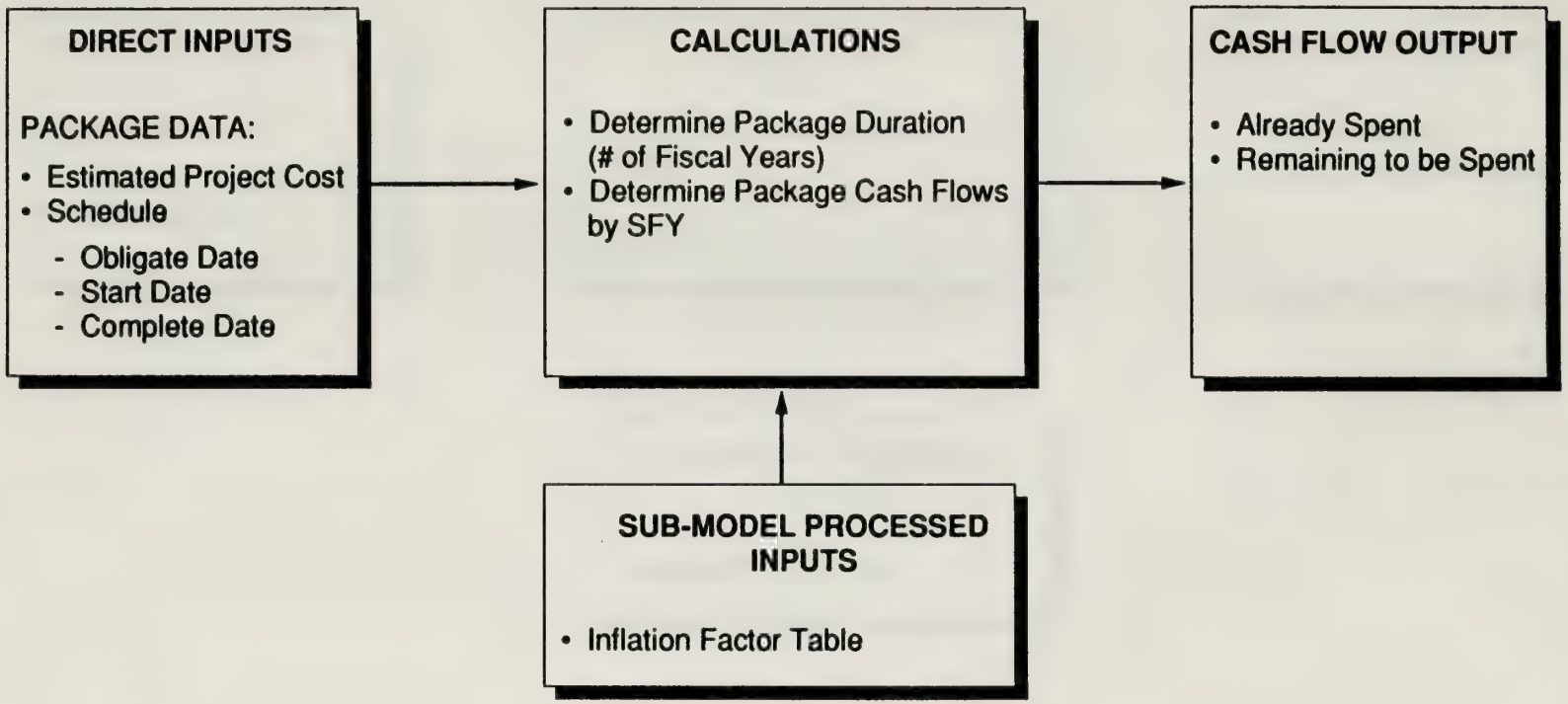
Construction Costs

- By Geographic Region and Package

- Construction costs; includes construction force account costs
- Package cash flows link to the summary statement

Project Summary Statement

Functional View of SDC Costs

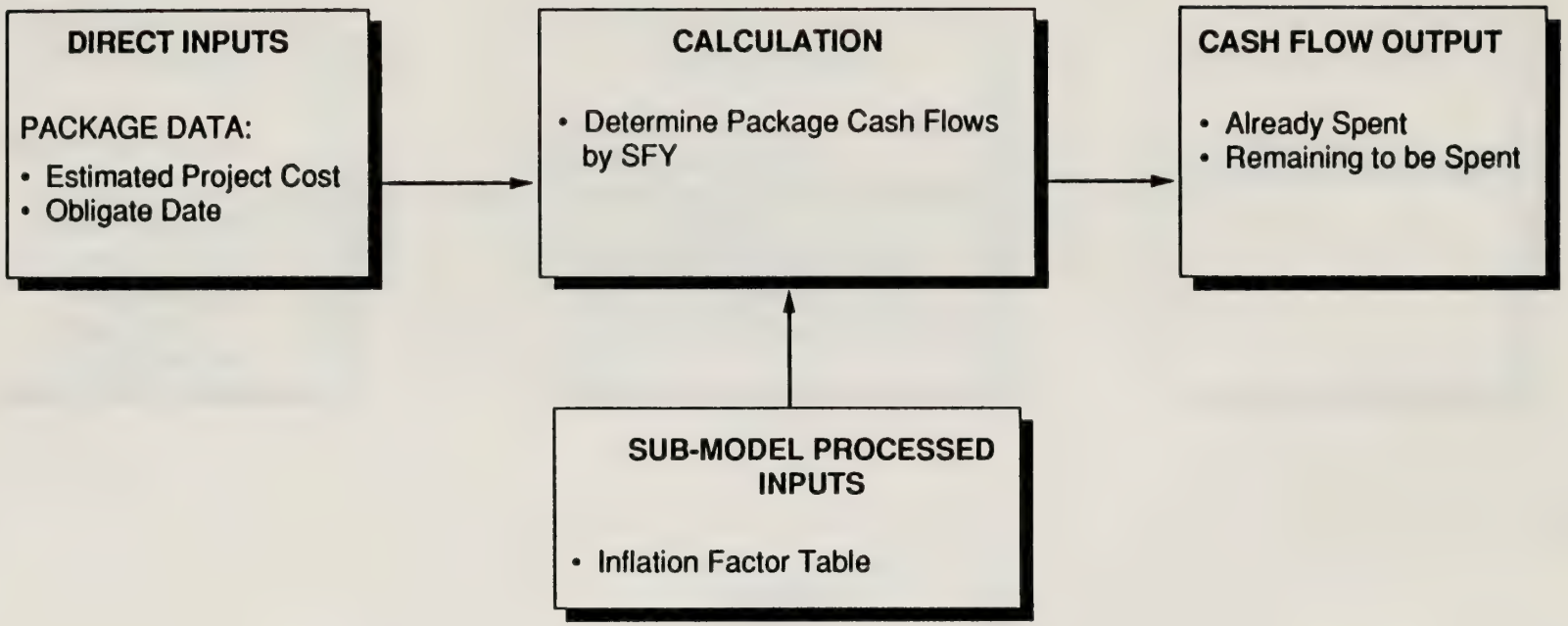


- Data sources noted on Assumptions page of model output
- The current model assumes a flat project spending curve based on scheduled start and complete dates ("Early" scenario)
- See model output for details on spending curve assumptions for specific cost items



Project Summary Statement

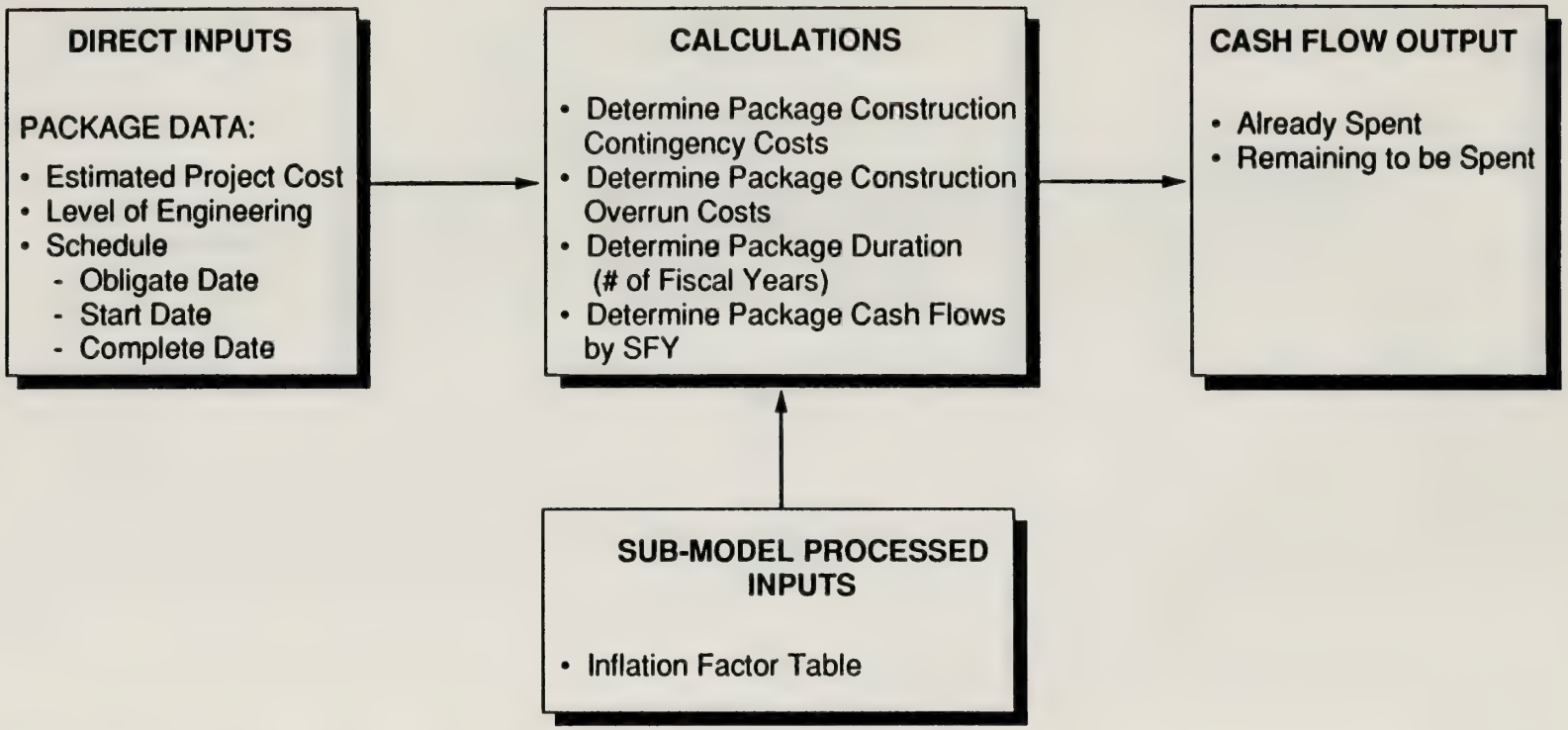
Functional View of ROW Costs



- Data sources noted on Assumptions page of model output
- The current model assumes that ROW costs are incurred at the obligation date ("Early" scenario)

Project Summary Statement

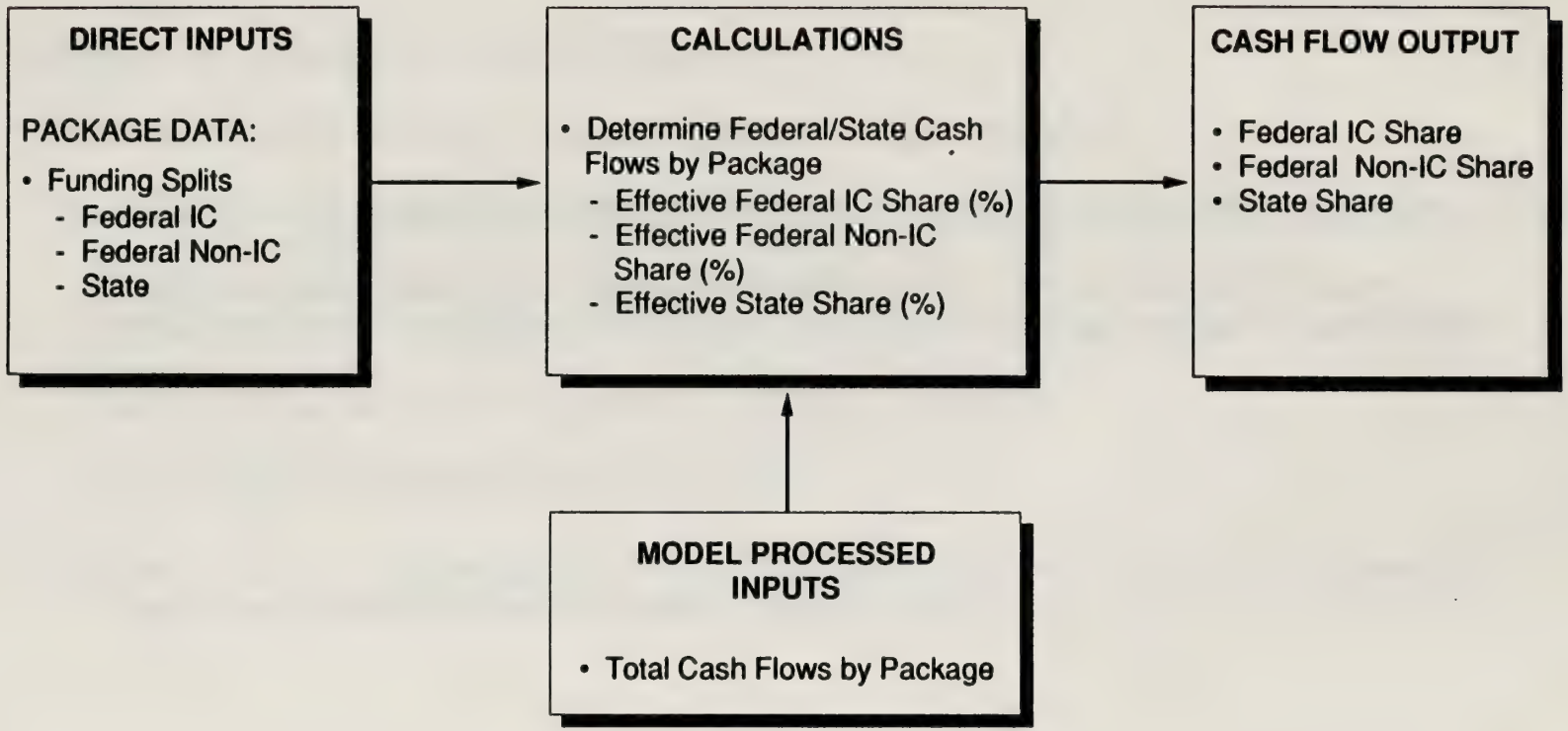
Functional View of Construction Costs



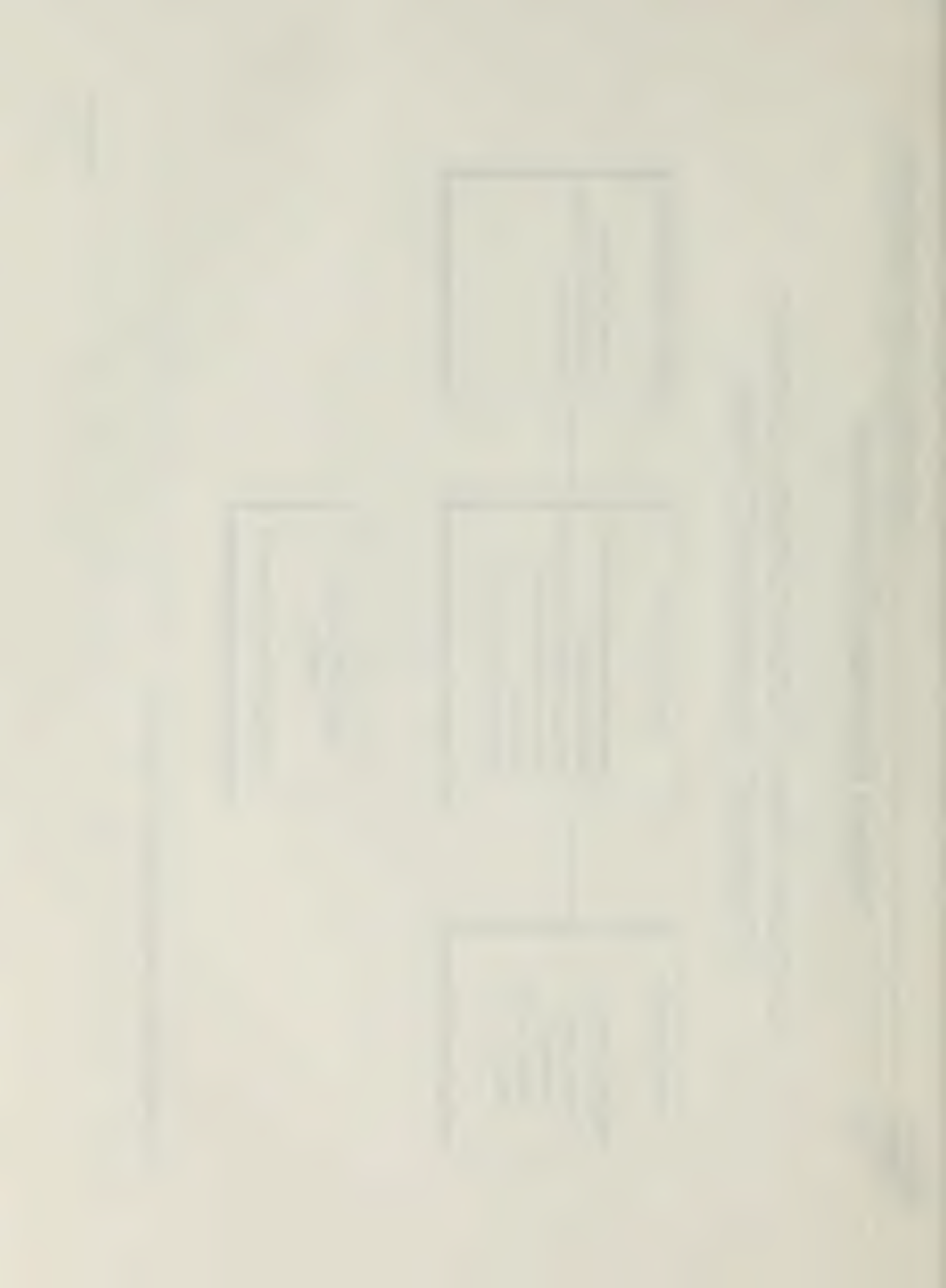
- Data sources noted on Assumptions page of model output
- The construction contingency cost factor (7%) is above and beyond that already included in the APF amount
- The construction overrun cost factor is currently "turned off" in the model; in general, the factor is based on the level of engineering status
- The current model assumes a flat project spending curve based on scheduled start and completion dates ("Early" scenario)

Project Summary Statement

Functional View of Funding Source Estimates (Federal IC, Federal Non-IC, State)



- Data sources noted on Assumptions page of model output



Project Summary Statement

Processed Inputs -- Inflation Factor Table

- Inflation is assumed to be 3.5% per annum
- The Base Year is 1992 (the inflation factor in 1992 is always 1)
- The inflation table is set up with an "Inflation Flag", which is a one-cell range named IFLAG
  - IFLAG is a value that functions as an on/off switch -- "0" is off, and "1" is on
  - The formulas that calculate the inflation factor for each year are set up as follows:

    Factor = Previous Year's Factor * (1 + (0.035 * IFLAG))

  - When IFLAG is "0", the Factor is always 1
- Inflation is "built in" to the model at the detailed package level; each year's spending in a cash flow is multiplied by that year's inflation factor

CA/T Module

Next Steps

- Training of EOTC personnel on the model has been completed
- This is a "living" model
  - Needs constant refinement and updated data to improve the level of detail and sophistication
  - It should be modified as required
- PMS Rev 4 information should be entered into the model
- The project duration and spending curve assumptions should be refined to allow a more detailed analysis of "what if" scenarios

CA/T Module

Complete Printout

Assumptions

Scope of Project based on Proposed Action

Cost Estimates from October 91 Annual Project Forecast for "to go" costs as of December 1989
(does not include approximately $250million in Pre Ice Obligations)

Project Schedules reflect current plan as of October 1991

Level of Engineering estimates from December 91 Progress Report

Funding splits provided by CA/T Project Team

Inflation factor used 3.5% annually

Flat project spending assumed across State fiscal years based on scheduled start and end dates

ROW Costs incurred at Obligation Date

Program Management/Preliminary Engineering spread evenly across SFY 91 – SFY 94

Construction Management/Construction Support spread with overall construction spending

Utility Force account costs included with construction costs and section design costs

CA/T Project Summary

Scenario (Early = 0, Late = 1) 0.0%
Overrun Flag (1 = ON, 0 = Off) 0

Package	Description	Est. Proj. Cost 10/91 $'s	Revised Total Cost	Spent Prior to SFY 1992	Projected Costs by State Fiscal Year -- Inflated Dollars									
					Jul-91 Jun-92	Jul-92 Jun-93	Jul-93 Jun-94	Jul-94 Jun-95	Jul-95 Jun-96	Jul-96 Jun-97	Jul-97 Jun-98	Jul-98 Jun-99	Jul-99 Jun-2000	Jun-2000 Jun-2001
SOUTH BOSTON														
	Section Design Consultants	27,772	27,772	6.9	11.0	6.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Right of Way	69,917	69,917	0.0	32.5	38.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Construction	423,728	453,262	0.0	54.7	57.6	97.5	96.6	49.1	50.8	52.6	46.3	0.0	0.0
	SUBTOTAL SOUTH BOSTON	521,417	550,950	6.9	98.2	102.3	101.9	96.6	49.1	50.8	52.6	46.3	0.0	0.0
EAST BOSTON / ITT														
	Section Design Consultants	30,945	30,945	20.7	1.7	3.7	3.3	2.2	0.0	0.0	0.0	0.0	0.0	0.0
	Right of Way	69,842	69,842	0.0	61.2	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Construction	730,001	780,882	1.0	159.1	194.5	188.0	168.9	55.7	33.5	34.7	0.0	0.0	0.0
	SUBTOTAL EAST BOSTON/ITT	830,788	881,669	21.6	222.0	207.2	191.2	171.1	55.7	33.5	34.7	0.0	0.0	0.0
SOUTH BAY														
	Section Design Consultants	76,358	76,358	1.8	18.5	26.2	25.8	7.3	0.0	0.0	0.0	0.0	0.0	0.0
	Right of Way	72,240	72,240	0.0	33.0	24.8	16.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Construction	890,665	952,047	0.0	0.0	30.6	157.4	180.4	174.5	180.6	202.3	183.4	0.0	0.0
	SUBTOTAL SOUTH BAY	1,039,263	1,100,645	1.8	51.6	81.6	199.4	187.7	174.5	180.6	202.3	183.4	0.0	0.0
CENTRAL ARTERY														
	Section Design Consultants	77,684	77,684	9.7	24.6	24.2	16.7	1.6	0.0	0.0	0.0	0.0	0.0	0.0
	Right of Way	46,273	46,273	0.0	42.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Construction	1,485,672	1,589,223	0.0	2.2	65.7	324.7	268.1	266.4	275.7	304.7	249.5	92.8	0.0

CONFIDENTIAL -- PRELIMINARY DRAFT

CA/T Project Summary

Scenario (Early = 0, Late = 1) 0.0%
Overrun Flag (1 = ON, 0 = Off) 0

Package	Description	Est. Proj. Cost 10/91 $'s	Revised Total Cost	Spent Prior to SFY 1992	Projected Costs by State Fiscal Year -- Inflated Dollars									
					Jul-91 Jun-92	Jul-92 Jun-93	Jul-93 Jun-94	Jul-94 Jun-95	Jul-95 Jun-96	Jul-96 Jun-97	Jul-97 Jun-98	Jul-98 Jun-99	Jul-99 Jun-2000	Jun-2000 Jun-2001
	SUBTOTAL CENTRAL ARTERY	1,609,629	1,713,180	9.7	68.8	94.4	341.4	269.7	266.4	275.7	304.7	249.5	92.8	0.0
CENTRAL ARTERY NORTH														
	Section Design Consultants	26,447	26,447	0.0	2.2	13.7	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Right of Way	23,000	23,000	0.0	0.0	23.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Construction	717,263	767,256	0.0	0.0	0.0	91.4	188.0	156.3	161.7	167.4	66.1	68.4	0.0
	SUBTOTAL CENTRAL ARTERY NORTH	766,710	816,703	0.0	2.2	37.5	103.1	188.0	156.3	161.7	167.4	66.1	68.4	0.0
PROJECT WIDE														
	Management Consultant/Preliminary Engineering	245,750	245,750	61.4	61.4	61.4	61.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Management Consultant/Construction Support	261,262	261,262	0.0	11.0	21.4	43.8	46.0	35.8	35.9	36.6	25.6	5.1	0.0
	Geotechnical Services	16,216	16,216	6.5	3.2	3.4	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Section Design Consultants	55,762	55,762	17.8	21.7	10.9	5.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0
	Right of Way	19,747	19,747	0.0	19.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Construction	457,118	487,406	7.1	32.2	80.9	95.9	98.2	63.8	66.0	38.3	39.6	24.3	0.0
	SUBTOTAL PROJECT WIDE	1,055,855	1,086,143	92.8	149.3	178.0	209.8	145.3	99.6	101.9	74.9	65.2	29.4	0.0
	Totals	5,823,662	6,149,291	132.9	592.0	701.1	1,147.0	1,058.4	801.5	804.2	836.6	610.5	190.6	0.0
	Cumulative Totals			132.9	724.9	1,425.9	2,572.9	3,631.3	4,432.8	5,237.0	6,073.7	6,684.1	6,874.8	6,874.8

CA/T Project Summary

Scenario (Early = 0, Late = 1)	0.0%
Overrun Flag (1 = ON, 0 = Off)	0

Package	Description	Est. Proj. Cost 10/91 $'s	Revised Total Cost	Spent Prior to SFY 1992	Projected Costs by State Fiscal Year -- Inflated Dollars									
					Jul-91 Jun-92	Jul-92 Jun-93	Jul-93 Jun-94	Jul-94 Jun-95	Jul-95 Jun-96	Jul-96 Jun-97	Jul-97 Jun-98	Jul-98 Jun-99	Jul-99 Jun-2000	Jun-2000 Jun-2001

CONFIDENTIAL -- PRELIMINARY DRAFT

CA/T Project Summary

Scenario (Early = 0, Late = 1) 0.0%
Overrun Flag (1 = ON, 0 = Off) 0

Package	Description	Est. Proj. Cost 10/91 $'s	Revised Total Cost	Spent Prior to SFY 1992	Projected Costs by State Fiscal Year -- Inflated Dollars									
					Jul-91 Jun-92	Jul-92 Jun-93	Jul-93 Jun-94	Jul-94 Jun-95	Jul-95 Jun-96	Jul-96 Jun-97	Jul-97 Jun-98	Jul-98 Jun-99	Jul-99 Jun-2000	Jun-2000 Jun-2001
Project Costs By Contract Type														
	Total SDC Costs	818,196	818,196	124.8	155.4	171.0	175.9	58.2	35.8	35.9	36.6	25.6	5.1	0.0
	Total ROW Costs	301,019	301,019	0.0	188.5	100.8	16.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total Construction Costs	4,704,447	5,030,077	8.1	248.2	429.3	954.8	1,000.2	765.7	768.4	800.0	584.9	185.5	0.0
	Total Project Costs	**5,823,662**	**6,149,291**	**132.9**	**592.0**	**701.1**	**1,147.0**	**1,058.4**	**801.5**	**804.2**	**836.6**	**610.5**	**190.6**	**0.0**
	Percentage Spending by Year			2%	9%	10%	17%	15%	12%	12%	12%	9%	3%	0%
Project Costs by Funding Source														
	Federal IC	3,258,478	3,437,275	87.9	402.0	490.0	653.9	623.3	408.8	400.6	385.4	287.9	60.1	0.0
	Federal Non-IC	1,491,759	1,574,401	28.4	115.2	125.9	292.5	246.8	230.3	238.0	275.8	179.7	44.4	0.0
	State & Local	1,073,554	1,137,745	16.5	74.9	85.2	200.6	188.3	162.4	165.5	175.4	142.9	86.2	0.0
	Total Project	**5,823,791**	**6,149,422**	**132.9**	**592.1**	**701.1**	**1,147.0**	**1,058.4**	**801.5**	**804.2**	**836.6**	**610.5**	**190.6**	**0.0**
Percentage Breakout by Funding Source														
	Federal IC	56%	56%	66%	68%	70%	57%	59%	51%	50%	46%	47%	32%	0%
	Federal Non-IC	26%	26%	21%	19%	18%	26%	23%	29%	30%	33%	29%	23%	0%
	State & Local	18%	19%	12%	13%	12%	17%	18%	20%	21%	21%	23%	45%	0%
	Total Project	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0%**
Cumulative Project Costs by Funding Source														
	Federal IC			87.9	489.9	979.9	1,633.8	2,257.1	2,665.9	3,066.5	3,451.9	3,739.8	3,799.9	3,799.9
	Federal Non-IC			28.4	143.6	269.5	562.0	808.8	1,039.1	1,277.2	1,552.9	1,732.7	1,777.1	1,777.1
	State & Local			16.5	91.4	176.6	377.2	565.5	727.9	893.5	1,068.9	1,211.8	1,298.0	1,298.0
	Total Project			**132.9**	**725.0**	**1,426.1**	**2,573.0**	**3,631.4**	**4,432.9**	**5,237.2**	**6,073.8**	**6,684.3**	**6,874.9**	**6,874.9**

CONFIDENTIAL -- PRELIMINARY DRAFT

CA/T SDC Costs

Includes Management Consulting costs of $245,750 (P/E) & $261,262 (Constr. support)
Does not include $26,245 obligated prior ICE
Construction support costs of $43,847 included with and
spread over period of design
Also includes $25,343 of design force account costs
Includes $16,216 of Geotechnical Services costs

Package	Description	Est. Proj. Cost 10/91 $'s	Level Of Engineering	SDC Contingency	Overrun Factor	Revised Total Cost	Early Obligate	Early Start	Early Complete	Duration FY's
SOUTH BOSTON										
D001A	I-90 SOUTH BOSTON INTERCHANGE	10,538	1			10,538	05-May-92	04-Jun-92	02-Dec-93	3
D001B	VENT BUILDING 5 SUPERSTRUCTURE	1,192	1			1,192	08-Jun-92	08-Jul-92	03-Jul-93	2
D002A	SOUTH BOSTON HAUL ROAD	1,055	4			1,055	26-Dec-88	25-Jan-89	16-Feb-91	3
D004A	I-90 BMIP TUNNEL	11,648	4			11,648	19-Sep-90	19-Oct-90	18-Oct-91	2
D024A	SERVICE/ADMINISTRATION COMPLEX	3,338	2			3,338	01-Apr-92	09-Feb-92	15-Oct-92	2
C25A1	Remediation - South Boston Haul Road									
	SUBTOTAL SOUTH BOSTON	27,772				27,772				
EAST BOSTON / ITT										
D005A	I-90 IMMERSED TUBE TUNNEL	1,387	4			1,387	15-Oct-89	14-Nov-89	14-Nov-89	1
D005B	I-90 TUNNEL FINISHES	2,324	3			2,324	22-Oct-90	21-Nov-90	11-Apr-91	1
D007A	I-90 BIRD ISLAND FLATS (BIF)	14,165	4			14,165	31-Oct-90	30-Nov-90	09-Dec-90	1
D007B	I-90 PORTER STREET OUTFALL SEWERS	2,787	4			2,787	18-Jun-90	18-Jul-90	18-Jul-90	1
D007C	I-90 EAST BOSTON TOLL PLAZA AND FACILITIE	1,061	1			1,061	01-Apr-92	25-Apr-92	20-Jan-93	2
D007D	AIRPORT INTERCHANGE	3,396				3,396	01-Apr-92	19-May-92	24-Jan-94	3
D008A	EAST BOSTON AIRPORT/ROUTE 1A INTERCHAN	5,825	1			5,825	05-Feb-93	07-Mar-93	05-Sep-94	3
R05A2	Building Demolition, South Boston									
R07A3	Demolition of Logan Airport Buildings									
	SUBTOTAL EAST BOSTON/ITT	30,945				30,945				
SOUTH BAY										
D009A	SOUTH BAY NB TUNNEL, WEST SHORE	24,542	2			24,542	03-Nov-91	03-Dec-91	05-Jul-93	3
D009B	SOUTH BAY FORT POINT CHANNEL CROSSING	11,848	1			11,848	15-Jul-92	14-Aug-92	11-Feb-94	2
D009C	SOUTH BAY, RANDOLPH TO KNEELAND STREE	18,144	1			18,144	02-Aug-92	01-Sep-92	02-Jul-94	3
D009D	SOUTH BAY INTERSECTION RESTORATION	1,103	1			1,103	30-Sep-93	30-Oct-93	30-Oct-94	2
D009E/F	FORT POINT CHANNEL RESTORATION	1,424	1			1,424	01-Sep-92	01-Oct-92	01-Sep-93	2
D010A	I-93 SOUTH BAY TEMPORARY BRIDGE UNDERF	7,605	2			7,605	28-Apr-92	28-Apr-92	28-Apr-92	1
D012A	I-93 MASS AVENUE INTERCHANGE	5,264	1			5,264	03-Jun-92	03-Jul-92	01-Oct-93	2
D013A	SOUTH BOSTON BYPASS ROAD	3,666	2			3,666	11-Sep-91	11-Oct-91	06-Oct-92	2
D014A	NEW EASTSIDE INTERCEPT RELOCATION	2,762	3			2,762	29-Apr-90	29-May-90	22-Sep-91	3
	SUBTOTAL SOUTH BAY	76,358				76,358				
CENTRAL ARTERY										
D011A	I-93 ATLANTIC AVENUE	12,372	2			12,372	11-Sep-91	11-Oct-91	10-Jan-93	2
D014B	I-93 CENTRAL ARTERY UTILITY RELOCATION	2,609	3			2,609	04-Nov-90	04-Dec-90	26-Sep-91	2
D014C	I-93 CENTRAL ARTERY UTILITY RELOCATION	3,849	3			3,849	04-Nov-90	04-Dec-90	01-Nov-91	2
D015A	I-93 CENTRAL ARTERY, NORTH TO CAUSEWAY	21,373	1			21,373	02-Mar-92	01-Apr-92	19-Jan-94	3
D015C	I-93 CENTRAL ARTERY SURFACE RESTORATIO	1,285	1			1,285	26-Nov-92	26-Dec-92	25-Dec-93	2
D016A	PARCEL 7	3,200	2			3,200	15-Apr-92	16-Apr-92	16-Jun-93	2
D017A	I-93 CENTRAL ARTERY, CONGRESS TO NORTH	25,749	2			25,749	13-May-91	12-Jun-91	15-Sep-93	4

CONFIDENTIAL -- PRELIMINARY DRAFT

CA/T SDC Costs

Includes Management Consulting costs of $245,750 (P/E) & $261,262 (Constr. support)
Does not include $26,245 obligated prior ICE
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spread over period of design
Also includes $25,343 of design force account costs
Includes $16,216 of Geotechnical Services costs

Package	Description	Est. Proj. Cost 10/91 $'s	Level Of Engineering	SDC Contingency	Overrun Factor	Revised Total Cost	Early			Duration FY's
							Obligate	Start	Complete	
D017B	I-93 CENTRAL ARTERY, MBTA BLUE LINE CROS	2,955	2			2,955	---	---	---	---
D018A/C	I-93 DEWEY SQUARE TUNNEL	2,695	1			2,695	29-May-93	28-Jun-93	28-Jun-95	3
D018B	I-93 DEWEY SQUARE TRANSFORMERS	0	4			0	---	---	---	---
D018C	I-93 SUMMER TO KNEELAND	1,598				1,598	29-May-93	28-Jun-93	28-Jun-95	3
	SUBTOTAL CENTRAL ARTERY	77,684				77,684				
CENTRAL ARTERY NORTH										
D019A	I-93 CENTRAL ARTERY NORTH OF CAUSEWAY	4,498	2			4,498	02-Apr-92	02-May-92	07-May-93	2
D019B	I-93 VIADUCTS AND RAMPS NORTH OF CHARL	21,554	1			21,554	02-Oct-92	01-Nov-92	01-Feb-94	2
D019C	CHARLES RIVER BASIN RESTORATION	40	1			40	17-Jan-93	16-Feb-93	17-Nov-93	2
D019D	CHARLES RIVER BRIDGES AND VIADUCTS	114	1			114	28-Sep-92	28-Oct-92	29-Apr-94	2
D019E	SCIENCE PARK UNDERPINNING	240	1			240	28-Sep-92	28-Oct-92	28-Jan-94	2
D019F	CHARLES RIVER BASIN FERRY/WHARF	0	1			0	17-Mar-93	16-Apr-93	16-Jan-94	2
D019G	CHARLES RIVER AND TUNNELS N. OF RIVER	0				0	26-Mar-93	25-Apr-93	15-Sep-94	3
	SUBTOTAL CENTRAL ARTERY NORTH	26,447				26,447				
PROJECTWIDE										
	Management Consultant/Preliminary Engineering	245,750				245,750				
	Management Consultant/Construction Support	261,262				261,262				
	Geotechnical Services	16,216				16,216	29-Aug-89	27-Sep-89	06-Apr-94	5
D020A	I-90 MECHANICAL/ELECTRICAL	5,238	3			5,238	31-Oct-90	30-Nov-90	30-May-92	2
D020B	I-93 MECHANICAL/ELECTRICAL	11,271	2			11,271	29-May-91	28-Jun-91	28-Jun-93	3
D021A	MATERIALS DISPOSAL SYSTEM	5,984	2			5,984	02-Jun-91	02-Jul-91	30-Aug-92	2
D021B	MATERIALS PROCESSING SYSTEM	0	4			0				
D021C	SPECTACLE ISLAND SURFACE RESTORATION	1,208	2			1,208	27-Jan-93	26-Feb-93	26-Nov-93	2
D022A	INTEGRATED PROJECT CONTROLS (IPCS)	12,899	2			12,899	12-May-91	11-Jun-91	09-Sep-93	4
C00B	Pest Control									
M025A	ASSESSMENT AND REMEDIATION	6,782				6,782	13-Nov-89	13-Dec-89	14-Dec-89	1
M025B	PHASE I/II ARCHAEOLOGY	0				0	31-May-87	30-Jun-87	02-Jul-87	2
M025C	PROJECT CONSERVATOR - 3RD WORK PROGR	42				42	01-Oct-92	24-Jun-88	25-Jun-88	1
M025D	PROJECT CONSERVATOR - 2ND WORK PROGR	1,090				1,090	02-Dec-90	01-Jan-91	02-Jan-91	1
M025E	PHASE III ARCHAEOLOGY - 1-93/I-90	1,935				1,935	29-Jan-92	28-Feb-92	01-Mar-92	1
M025F	HABS/HAER DOCUMENTATION	1,000				1,000	02-Jul-93	01-Aug-93	01-Aug-94	
M025G	PHASE III ARCHAEOLOGY - MATERIALS DISPO	110				110	14-Oct-90	30-Nov-90	01-Dec-90	1
M025H	PROJECT CONSERVATOR - 3RD WORK PROGR	1,048				1,048	02-Jul-93	01-Aug-93	01-Aug-94	2
M025S	PROJECTWIDE SAFETY CONSULTANT	5,156				5,156	01-Apr-92	27-Mar-92	28-Mar-92	1
M025T	PUBLIC INFORMATION CONTRACT	2,000				2,000	01-Jul-92	26-Feb-92	27-Feb-92	1
	SUBTOTAL PROJECT WIDE	578,990				578,990				
	Totals	818,196				818,196				
	Cumulative Totals									

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Package	Description	Late				Funding Splits – %			
		Obligate	Start	Complete	Duration Days	Federal IC	Federal NON–IC	State/ Local	Total
SOUTH BOSTON									
D001A	I–90 SOUTH BOSTON INTERCHANGE					90%		10%	100%
D001B	VENT BUILDING 5 SUPERSTRUCTURE					90%		10%	100%
D002A	SOUTH BOSTON HAUL ROAD					36%	48%	16%	100%
D004A	I–90 BMIP TUNNEL					90%		10%	100%
D024A	SERVICE/ADMINISTRATION COMPLEX					90%		10%	100%
C25A1	Remediation – South Boston Haul Road								
	SUBTOTAL SOUTH BOSTON								
EAST BOSTON / ITT									
D005A	I–90 IMMERSED TUBE TUNNEL					90%		10%	100%
D005B	I–90 TUNNEL FINISHES					90%		10%	100%
D007A	I–90 BIRD ISLAND FLATS (BIF)					90%		10%	100%
D007B	I–90 PORTER STREET OUTFALL SEWERS					90%		10%	100%
D007C	I–90 EAST BOSTON TOLL PLAZA AND FACILITIE					90%		10%	100%
D007D	AIRPORT INTERCHANGE					90%		10%	100%
						90%		10%	100%
D008A	EAST BOSTON AIRPORT/ROUTE 1A INTERCHAN					0%	80%	20%	100%
R05A2	Building Demolition, South Boston								
R07A3	Demolition of Logan Airport Buildings								
	SUBTOTAL EAST BOSTON/ITT								
SOUTH BAY									
D009A	SOUTH BAY NB TUNNEL, WEST SHORE					90%		10%	100%
D009B	SOUTH BAY FORT POINT CHANNEL CROSSING					90%		10%	100%
D009C	SOUTH BAY, RANDOLPH TO KNEELAND STREE					90%		10%	100%
D009D	SOUTH BAY INTERSECTION RESTORATION					90%		10%	100%
D009E/F	FORT POINT CHANNEL RESTORATION					90%		10%	100%
						90%		10%	100%
D010A	I–93 SOUTH BAY TEMPORARY BRIDGE UNDERP					90%		10%	100%
D012A	I–93 MASS AVENUE INTERCHANGE					0%	80%	20%	100%
D013A	SOUTH BOSTON BYPASS ROAD					0%	80%	20%	100%
D014A	NEW EASTSIDE INTERCEPT RELOCATION					90%		10%	100%
	SUBTOTAL SOUTH BAY								
CENTRAL ARTERY									
D011A	I–93 ATLANTIC AVENUE					90%		10%	100%
D014B	I–93 CENTRAL ARTERY UTILITY RELOCATION					0%	80%	20%	100%
D014C	I–93 CENTRAL ARTERY UTILITY RELOCATION					23%	60%	17%	100%
D015A	I–93 CENTRAL ARTERY, NORTH TO CAUSEWAY					0%	80%	20%	100%
D015C	I–93 CENTRAL ARTERY SURFACE RESTORATIO					0%	80%	20%	100%
D016A	PARCEL 7					0%	80%	20%	100%
D017A	I–93 CENTRAL ARTERY, CONGRESS TO NORTH					0%	80%	20%	100%

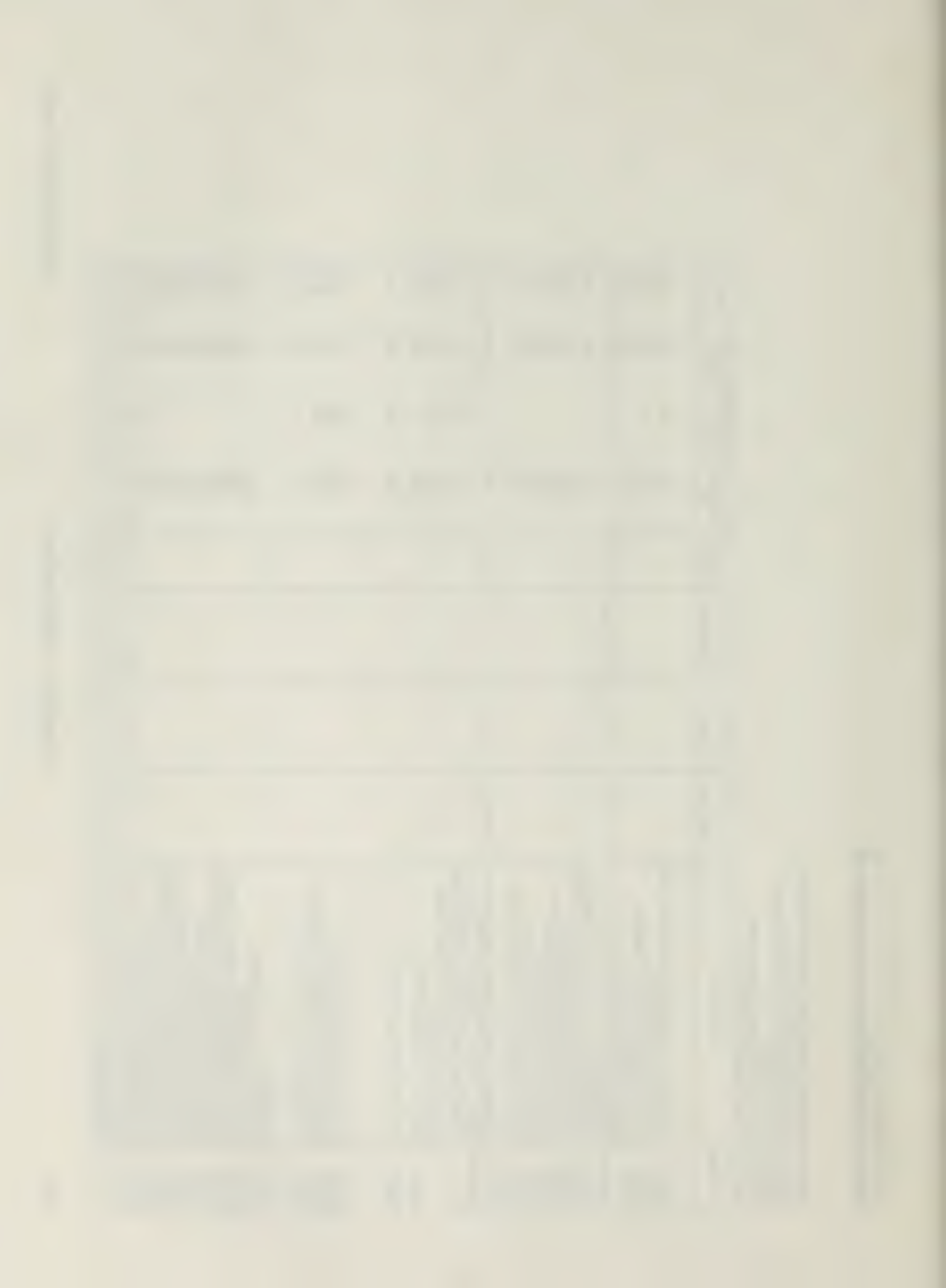
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Package	Description	Late				Funding Splits – %			
		Obligate	Start	Complete	Duration Days	Federal IC	Federal NON–IC	State/ Local	Total
D017B	I–93 CENTRAL ARTERY, MBTA BLUE LINE CROS					0%	80%	20%	100%
D018A/C	I–93 DEWEY SQUARE TUNNEL					90%		10%	100%
D018B	I–93 DEWEY SQUARE TRANSFORMERS					90%		10%	100%
D018C	I–93 SUMMER TO KNEELAND					90%		10%	100%
	SUBTOTAL CENTRAL ARTERY								
CENTRAL ARTERY NORTH									
D019A	I–93 CENTRAL ARTERY NORTH OF CAUSEWAY					90%		10%	100%
D019B	I–93 VIADUCTS AND RAMPS NORTH OF CHARL					90%		10%	100%
D019C	CHARLES RIVER BASIN RESTORATION					90%		10%	100%
D019D	CHARLES RIVER BRIDGES AND VIADUCTS					90%		10%	100%
D019E	SCIENCE PARK UNDERPINNING					90%		10%	100%
D019F	CHARLES RIVER BASIN FERRY/WHARF					90%		10%	100%
D019G	CHARLES RIVER AND TUNNELS N. OF RIVER					90%		10%	100%
	SUBTOTAL CENTRAL ARTERY NORTH								
PROJECTWIDE									
	Management Consultant/Preliminary Engineering					59%	28%	13%	100%
	Management Consultant/Construction Support					59%	28%	13%	100%
	Geotechnical Services					45%	40%	15%	100%
D020A	I–90 MECHANICAL/ELECTRICAL					90%		10%	100%
D020B	I–93 MECHANICAL/ELECTRICAL					68%	20%	13%	101%
D021A	MATERIALS DISPOSAL SYSTEM					68%	20%	13%	100%
D021B	MATERIALS PROCESSING SYSTEM					68%	20%	13%	100%
D021C	SPECTACLE ISLAND SURFACE RESTORATION					68%	20%	13%	100%
D022A	INTEGRATED PROJECT CONTROLS (IPCS)					90%		10%	100%
C00B	Pest Control								
M025A	ASSESSMENT AND REMEDIATION					90%		10%	100%
M025B	PHASE I/II ARCHAEOLOGY					90%		10%	100%
M025C	PROJECT CONSERVATOR – 3RD WORK PROGF					90%		10%	100%
M025D	PROJECT CONSERVATOR – 2ND WORK PROGF					90%		10%	100%
M025E	PHASE III ARCHAEOLOGY – 1–93/I–90					90%		10%	100%
M025F	HABS/HAER DOCUMENTATION					90%		10%	100%
M025G	PHASE III ARCHAEOLOGY – MATERIALS DISPO					90%		10%	100%
M025H	PROJECT CONSERVATOR – 3RD WORK PROGF					90%		10%	100%
M025S	PROJECTWIDE SAFETY CONSULTANT					68%	20%	13%	100%
M025T	PUBLIC INFORMATION CONTRACT					68%	20%	13%	100%
	SUBTOTAL PROJECT WIDE								
	Totals								
	Cumulative Totals								

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Package	Description	Spent Jul-85 Jun-91	Projected Costs by State Fiscal Year -- Inflated Dollars Jul-91 Jun-92	Jul-92 Jun-93	Jul-93 Jun-94	Jul-94 Jun-95	Jul-95 Jun-96	Jul-96 Jun-97	Jul-97 Jun-98	Jul-98 Jun-99	Jul-99 Jun-2000	Jun-2000 Jun-2001
SOUTH BOSTON												
D001A	I-90 SOUTH BOSTON INTERCHANGE	0.0	3.5	3.6	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D001B	VENT BUILDING 5 SUPERSTRUCTURE	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D002A	SOUTH BOSTON HAUL ROAD	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D004A	I-90 BMIP TUNNEL	5.8	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D024A	SERVICE/ADMINISTRATION COMPLEX	0.0	1.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C25A1	Remediation - South Boston Haul Road											
	SUBTOTAL SOUTH BOSTON	6.9	11.0	6.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EAST BOSTON / ITT												
D005A	I-90 IMMERSED TUBE TUNNEL	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D005B	I-90 TUNNEL FINISHES	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D007A	I-90 BIRD ISLAND FLATS (BIF)	14.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D007B	I-90 PORTER STREET OUTFALL SEWERS	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D007C	I-90 EAST BOSTON TOLL PLAZA AND FACILITIE	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D007D	AIRPORT INTERCHANGE	0.0	1.1	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D008A	EAST BOSTON AIRPORT/ROUTE 1A INTERCHAN	0.0	0.0	2.0	2.1	2.2	0.0	0.0	0.0	0.0	0.0	0.0
R05A2	Building Demolition, South Boston											
R07A3	Demolition of Logan Airport Buildings											
	SUBTOTAL EAST BOSTON/ITT	20.7	1.7	3.7	3.3	2.2	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH BAY												
D009A	SOUTH BAY NB TUNNEL, WEST SHORE	0.0	8.2	8.5	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D009B	SOUTH BAY FORT POINT CHANNEL CROSSING	0.0	0.0	6.1	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D009C	SOUTH BAY, RANDOLPH TO KNEELAND STREE	0.0	0.0	6.3	6.5	6.7	0.0	0.0	0.0	0.0	0.0	0.0
D009D	SOUTH BAY INTERSECTION RESTORATION	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
D009E/F	FORT POINT CHANNEL RESTORATION	0.0	0.0	0.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D010A	I-93 SOUTH BAY TEMPORARY BRIDGE UNDERI	0.0	7.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D012A	I-93 MASS AVENUE INTERCHANGE	0.0	0.0	2.7	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D013A	SOUTH BOSTON BYPASS ROAD	0.0	1.8	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D014A	NEW EASTSIDE INTERCEPT RELOCATION	1.8	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL SOUTH BAY	1.8	18.5	26.2	25.8	7.3	0.0	0.0	0.0	0.0	0.0	0.0
CENTRAL ARTERY												
D011A	I-93 ATLANTIC AVENUE	0.0	6.2	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D014B	I-93 CENTRAL ARTERY UTILITY RELOCATION	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D014C	I-93 CENTRAL ARTERY UTILITY RELOCATION	1.9	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D015A	I-93 CENTRAL ARTERY, NORTH TO CAUSEWAY	0.0	7.1	7.4	7.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D015C	I-93 CENTRAL ARTERY SURFACE RESTORATIO	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D016A	PARCEL 7	0.0	1.6	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D017A	I-93 CENTRAL ARTERY, CONGRESS TO NORTH	6.4	6.4	6.7	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Package	Description	Spent Jul-85 Jun-91	Projected Costs by State Fiscal Year -- Inflated Dollars Jul-91 Jun-92	Jul-92 Jun-93	Jul-93 Jun-94	Jul-94 Jun-95	Jul-95 Jun-96	Jul-96 Jun-97	Jul-97 Jun-98	Jul-98 Jun-99	Jul-99 Jun-2000	Jun-2000 Jun-2001
D017B	I-93 CENTRAL ARTERY, MBTA BLUE LINE CROS											
D018A/C	I-93 DEWEY SQUARE TUNNEL	0.0	0.0	0.9	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
D018B	I-93 DEWEY SQUARE TRANSFORMERS											
D018C	I-93 SUMMER TO KNEELAND	0.0	0.0	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL CENTRAL ARTERY	9.7	24.6	24.2	16.7	1.6	0.0	0.0	0.0	0.0	0.0	0.0
CENTRAL ARTERY NORTH												
D019A	I-93 CENTRAL ARTERY NORTH OF CAUSEWAY	0.0	2.2	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D019B	I-93 VIADUCTS AND RAMPS NORTH OF CHARL	0.0	0.0	11.2	11.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D019C	CHARLES RIVER BASIN RESTORATION	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D019D	CHARLES RIVER BRIDGES AND VIADUCTS	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D019E	SCIENCE PARK UNDERPINNING	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D019F	CHARLES RIVER BASIN FERRY/WHARF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D019G	CHARLES RIVER AND TUNNELS N. OF RIVER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL CENTRAL ARTERY NORTH	0.0	2.2	13.7	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PROJECT WIDE												
	Management Consultant/Preliminary Engineering	61.4	61.4	61.4	61.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Management Consultant/Construction Support	0.0	11.0	21.4	43.8	46.0	35.8	35.9	36.6	25.6	5.1	0.0
	Geotechnical Services	6.5	3.2	3.4	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D020A	I-90 MECHANICAL/ELECTRICAL	2.6	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D020B	I-93 MECHANICAL/ELECTRICAL	3.8	3.8	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D021A	MATERIALS DISPOSAL SYSTEM	0.0	3.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D021B	MATERIALS PROCESSING SYSTEM											
D021C	SPECTACLE ISLAND SURFACE RESTORATION	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D022A	INTEGRATED PROJECT CONTROLS (IPCS)	3.2	3.2	3.3	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C00B	Pest Control											
M025A	ASSESSMENT AND REMEDIATION	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M025B	PHASE I/II ARCHAEOLOGY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M025C	PROJECT CONSERVATOR -- 3RD WORK PROGR	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M025D	PROJECT CONSERVATOR -- 2ND WORK PROGR	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M025E	PHASE III ARCHAEOLOGY -- 1-93/I-90	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M025F	HABS/HAER DOCUMENTATION	0.0	0.0	0.0	0.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0
M025G	PHASE III ARCHAEOLOGY -- MATERIALS DISPO	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M025H	PROJECT CONSERVATOR -- 3RD WORK PROGR	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
M025S	PROJECTWIDE SAFETY CONSULTANT	0.0	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
M025T	PUBLIC INFORMATION CONTRACT	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL PROJECT WIDE	85.7	97.3	97.2	113.9	47.1	35.8	35.9	36.6	25.6	5.1	0.0
	Totals	124.8	155.4	171.0	175.9	58.2	35.8	35.9	36.6	25.6	5.1	0.0
	Cumulative Totals	124.8	280.2	451.2	627.1	685.2	721.1	756.9	793.5	819.1	824.2	824.2

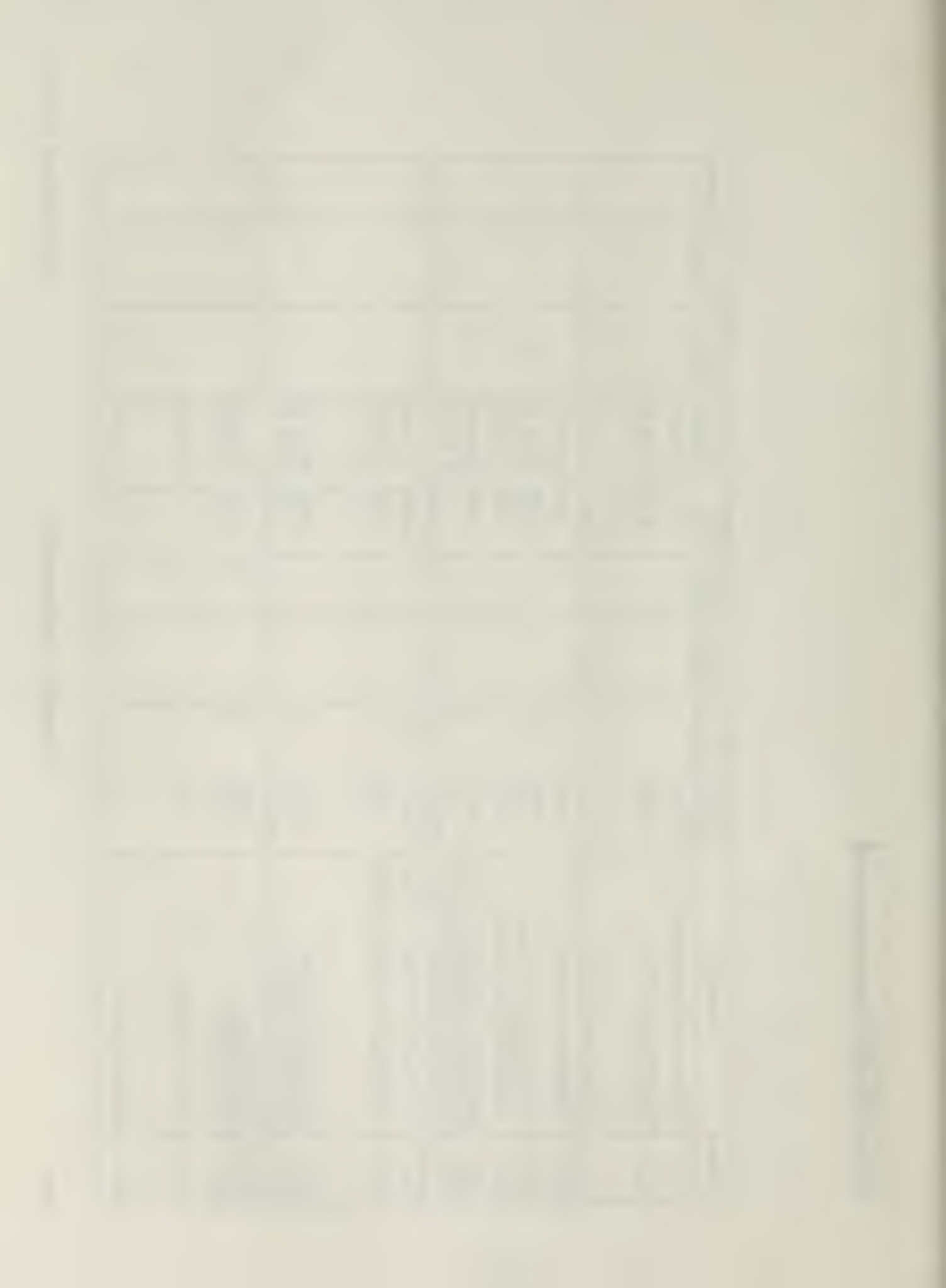
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CA/T ROW Costs

Package	Description	Est. Proj. Cost 10/91 $'s	Level Of Engineering	ROW Contingency	Overrun Factor	Revised Total Cost	Early Obligate	Early Start	Early Complete	Early Duration Days
SOUTH BOSTON										
D001A	I-90 SOUTH BOSTON INTERCHANGE	37,423	1			37,423	01-Apr-93			
D002A	SOUTH BOSTON HAUL ROAD	13,844	4			13,844	30-Sep-91			
D004A	I-90 BMIP TUNNEL	18,650	4			18,650	30-Sep-91			
	SUBTOTAL SOUTH BOSTON	69,917				69,917				
EAST BOSTON / ITT										
D005A	I-90 IMMERSED TUBE TUNNEL	3,839	4			3,839	30-Sep-91			
D007A	I-90 BIF	16,832	4			16,832	30-Sep-91			
D007B	I-90 PORTER ST OUTFALL SEWERS	546	4			546	30-Sep-91			
D007C	I-90 E. BOSTON TOLL PLAZA	125				125	01-Jan-93			
D007D	E. BOSTON AIRPORT INTERCHANGE	8,500				8,500	01-Dec-92			
D008A1	EB AIRPORT/RT 1A INTERCHANGE	40,000	1			40,000	31-Mar-92			
R05A1	BUILDING DEMOLITION (PAPPAS RELOCATION)	0	4			0	01-Feb-90			
R05A1	BUILDING DEMOLITION, SOUTH BOSTON ACTU	0	4			0	28-Sep-90			
	SUBTOTAL EAST BOSTON/ITT	69,842				69,842				
SOUTH BAY										
D009A	S BAY NB TUNNEL, WEST SHORE, VENT BLDG #	32,540	2			32,540	01-Jan-92			
D009B	I-90 S BAY FORT POINT CHANNEL CROSSING	14,000	1			14,000	01-Apr-94			
D009C	S BAY NB TUNNEL, WEST SHORE, VENT BLDG #	1,200	1			1,200	01-Apr-94			
D012A	I-93 MASS AVE INTERCHANGE	14,000	1			14,000	01-Apr-93			
D013A	SO BOSTON BYPASS ROAD	10,000	2			10,000	01-Apr-93			
D014A	NEW EASTSIDE INTERCEPT RELOC	500	3			500	31-Mar-92			
	SUBTOTAL SOUTH BAY	72,240				72,240				
CENTRAL ARTERY										
D011A	I-93 ATLANTIC AVE	4,300	2			4,300	01-Apr-93			
D014B	CA UTIL RELOCATION	18,973	3			18,973	31-Mar-92			
D014C	CA UTIL RELOCATION	23,000	3			23,000	31-Mar-92			
D015A	CA NORTH TO CAUSEWAY	0	1			0	01-Apr-94			
D017A	CA CONGRESS TO NORTH	0	2			0	01-Apr-94			

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CA/T ROW Costs

Package	Description	Est. Proj. Cost 10/91 $'s	Level Of Engineering	ROW Contingency	Overrun Factor	Revised Total Cost	Early Obligate	Early Start	Early Complete	Duration Days
D018A	DEWEY SQUARE TUNNEL	0	1			0	31-Mar-92			
	SUBTOTAL CENTRAL ARTERY	46,273				46,273				
CENTRAL ARTERY NORTH										
D019A	CA NORTH OF CAUSEWAY (CANA)	23,000	2			23,000	01-Apr-93			
D019B	CA NORTH OF CAUSEWAY	0	1			0	01-Apr-94			
	SUBTOTAL CENTRAL ARTERY NORTH	23,000				23,000				
PROJECT WIDE										
D021A	MATERIALS DISPOSAL (DRY DOCK 3 LEASE)	2,000	2			2,000	01-Apr-92			
D021B	MATERIALS PROCESSING SYSTEM	17,747	4			17,747	01-Apr-92			
	SUBTOTAL PROJECT WIDE	19,747				19,747				
	Totals	301,019				301,019				
	Cumulative Totals									

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CA/T ROW Costs

Package	Description	Late				Funding Splits – %			
		Obligate	Start	Complete	Duration Days	Federal IC	Federal NON–IC	State/ Local	Total
SOUTH BOSTON									
D001A	I–90 SOUTH BOSTON INTERCHANGE	01–Apr–93				90%		10%	100%
D002A	SOUTH BOSTON HAUL ROAD	30–Sep–91				36%	48%	16%	100%
D004A	I–90 BMIP TUNNEL	30–Sep–91				90%		10%	100%
	SUBTOTAL SOUTH BOSTON								
EAST BOSTON / ITT									
D005A	I–90 IMMERSED TUBE TUNNEL	30–Sep–91				90%		10%	100%
D007A	I–90 BIF	30–Sep–91				90%		10%	100%
D007B	I–90 PORTER ST OUTFALL SEWERS	30–Sep–91				90%		10%	100%
D007C	I–90 E. BOSTON TOLL PLAZA	01–Jan–93				90%		10%	100%
D007D	E. BOSTON AIRPORT INTERCHANGE	01–Dec–92				90%		10%	100%
D008A1	EB AIRPORT/RT 1A INTERCHANGE	31–Mar–92					80%	20%	100%
R05A1	BUILDING DEMOLITION (PAPPAS RELOCATION)	01–Feb–90							0%
R05A1	BUILDING DEMOLITION, SOUTH BOSTON ACTU	28–Sep–90							0%
	SUBTOTAL EAST BOSTON/ITT								
SOUTH BAY									
D009A	S BAY NB TUNNEL, WEST SHORE, VENT BLDG #	01–Jan–92				90%		10%	100%
D009B	I–90 S BAY FORT POINT CHANNEL CROSSING	01–Apr–94				90%		10%	100%
D009C	S BAY NB TUNNEL, WEST SHORE, VENT BLDG #	01–Apr–94				90%		10%	100%
D012A	I–93 MASS AVE INTERCHANGE	01–Apr–93					80%	20%	100%
D013A	SO BOSTON BYPASS ROAD	01–Apr–93					80%	20%	100%
D014A	NEW EASTSIDE INTERCEPT RELOC	31–Mar–92				90%		10%	100%
	SUBTOTAL SOUTH BAY								
CENTRAL ARTERY									
D011A	I–93 ATLANTIC AVE	01–Apr–93				90%		10%	100%
D014B	CA UTIL RELOCATION	31–May–92					80%	20%	100%
D014C	CA UTIL RELOCATION	31–May–92				23%	60%	17%	100%
D015A	CA NORTH TO CAUSEWAY	01–Apr–94					80%	20%	100%
D017A	CA CONGRESS TO NORTH	01–Apr–94				45%	40%	15%	100%

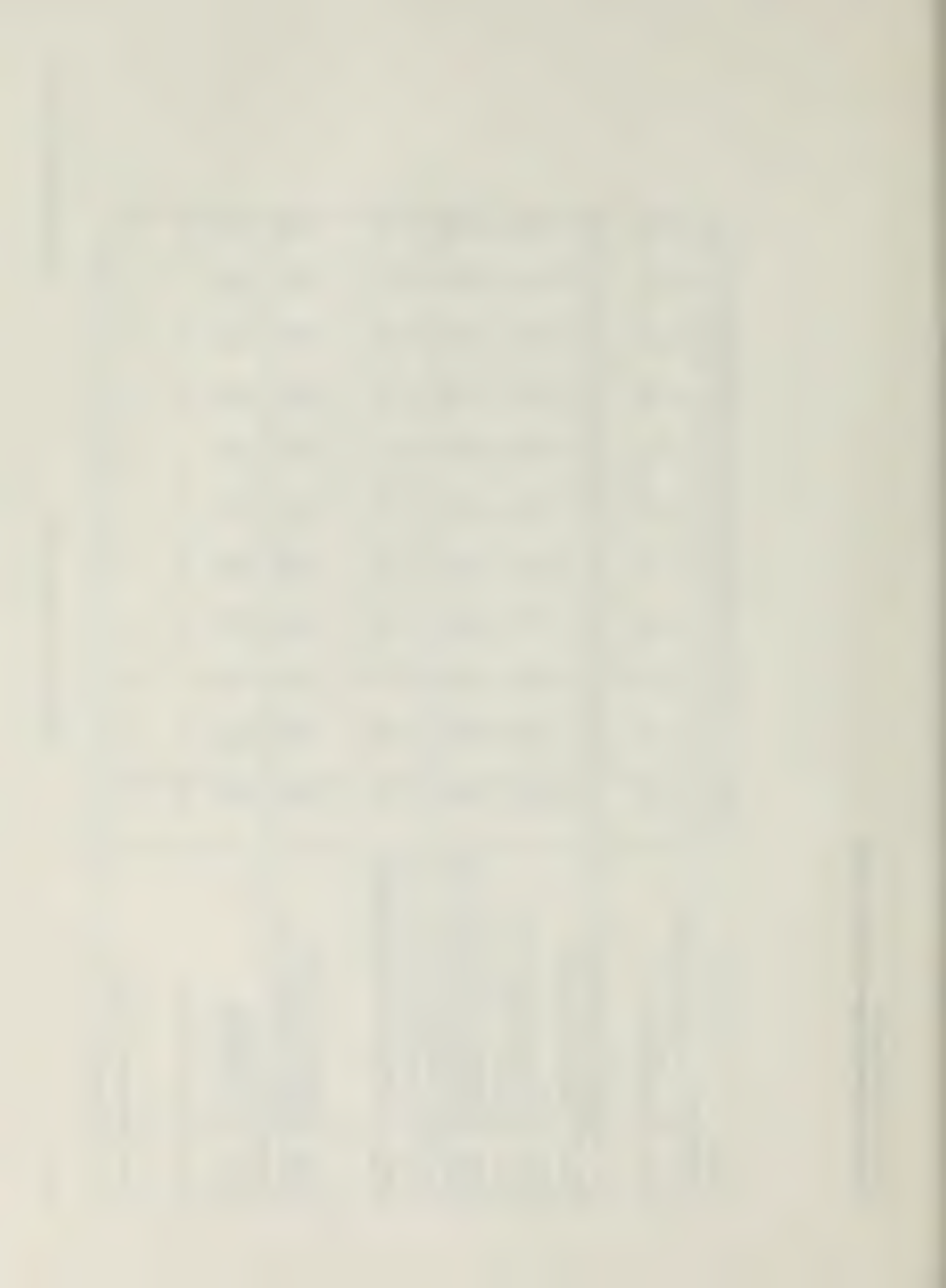
CA/T ROW Costs

Package	Description	Late				Funding Splits – %			
		Obligate	Start	Complete	Duration Days	Federal IC	Federal NON–IC	State/ Local	Total
D018A	DEWEY SQUARE TUNNEL	31–Mar–92				90%		10%	100%
	SUBTOTAL CENTRAL ARTERY								
CENTRAL ARTERY NORTH									
D019A	CA NORTH OF CAUSEWAY (CANA)	01–Apr–93				90%		10%	100%
D019B	CA NORTH OF CAUSEWAY	01–Apr–94				90%		10%	100%
	SUBTOTAL CENTRAL ARTERY NORTH								
PROJECT WIDE									
D021A	MATERIALS DISPOSAL (DRY DOCK 3 LEASE)	01–Apr–92				68%	20%	13%	100%
D021B	MATERIALS PROCESSING SYSTEM	01–Apr–92				68%	20%	13%	100%
	SUBTOTAL PROJECT WIDE								
	Totals								
	Cumulative Totals								

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CA/T ROW Costs

Package	Description	Spent Jul-85 Jun-91	Projected Costs by State Fiscal Year -- Inflated Dollars Jul-91 Jun-92	Jul-92 Jun-93	Jul-93 Jun-94	Jul-94 Jun-95	Jul-95 Jun-96	Jul-96 Jun-97	Jul-97 Jun-98	Jul-98 Jun-99	Jul-99 Jun-2000	Jun-2000 Jun-2001
SOUTH BOSTON												
D001A	I-90 SOUTH BOSTON INTERCHANGE	0.0	0.0	38.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D002A	SOUTH BOSTON HAUL ROAD	0.0	13.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D004A	I-90 BMIP TUNNEL	0.0	18.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL SOUTH BOSTON	0.0	32.5	38.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EAST BOSTON / ITT												
D005A	I-90 IMMERSED TUBE TUNNEL	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D007A	I-90 BIF	0.0	16.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D007B	I-90 PORTER ST OUTFALL SEWERS	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D007C	I-90 E. BOSTON TOLL PLAZA	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D007D	E. BOSTON AIRPORT INTERCHANGE	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D008A1	EB AIRPORT/RT 1A INTERCHANGE	0.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R05A1	BUILDING DEMOLITION (PAPPAS RELOCATION)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R05A1	BUILDING DEMOLITION, SOUTH BOSTON ACTU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL EAST BOSTON/ITT	0.0	61.2	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOUTH BAY												
D009A	S BAY NB TUNNEL, WEST SHORE, VENT BLDG #	0.0	32.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D009B	I-90 S BAY FORT POINT CHANNEL CROSSING	0.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D009C	S BAY NB TUNNEL, WEST SHORE, VENT BLDG #	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D012A	I-93 MASS AVE INTERCHANGE	0.0	0.0	14.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D013A	SO BOSTON BYPASS ROAD	0.0	0.0	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D014A	NEW EASTSIDE INTERCEPT RELOC	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL SOUTH BAY	0.0	33.0	24.8	16.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CENTRAL ARTERY												
D011A	I-93 ATLANTIC AVE	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D014B	CA UTIL RELOCATION	0.0	19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D014C	CA UTIL RELOCATION	0.0	23.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D015A	CA NORTH TO CAUSEWAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D017A	CA CONGRESS TO NORTH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



CA/T ROW Costs

Package	Description	Spent Jul-85 Jun-91	Projected Costs by State Fiscal Year -- Inflated Dollars Jul-91 Jun-92	Jul-92 Jun-93	Jul-93 Jun-94	Jul-94 Jun-95	Jul-95 Jun-96	Jul-96 Jun-97	Jul-97 Jun-98	Jul-98 Jun-99	Jul-99 Jun-2000	Jun-2000 Jun-2001
D018A	DEWEY SQUARE TUNNEL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL CENTRAL ARTERY	0.0	42.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CENTRAL ARTERY NORTH												
D019A	CA NORTH OF CAUSEWAY (CANA)	0.0	0.0	23.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D019B	CA NORTH OF CAUSEWAY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL CENTRAL ARTERY NORTH	0.0	0.0	23.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PROJECT WIDE												
D021A	MATERIALS DISPOSAL (DRY DOCK 3 LEASE)	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D021B	MATERIALS PROCESSING SYSTEM	0.0	17.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL PROJECT WIDE	0.0	19.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Totals	0.0	188.5	100.8	16.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Cumulative Totals	0.0	188.5	289.2	305.5	305.5	305.5	305.5	305.5	305.5	305.5	305.5

CA/T Construction Costs

Construction Contingency	7.0%
Overrun Contingency Factors	
Level 1 – 25% Design not Completed	13.0%
Level 2 – P/E Compl./25% Design Completed	11.0%
Level 3 – 75% Design Submitted	9.0%
Level 4 – PS&E Submitted	7.0%
Level 5 – Not Currently Used	5.0%
Complete	0.0%

Package	Description	Est. Proj. Cost 10/91 $'s	Level Of Engineering	Construction Contingency	Overrun Factor	Revised Total Cost	Early Obligate	Early Start	Early Complete	Duration FY's
SOUTH BOSTON										
C01A1	I–90 South Boston Interchange	204,036	1	14,221	0	218,257	02–Dec–93	01–Apr–94	31–Dec–98	6
C01B1	Vent Building (VB) 5	17,957	1	1,252	0	19,209	02–Dec–95	31–Mar–96	31–Mar–98	3
C02A1	South Boston Haul Road	10,936	2	762	0	11,698	16–Sep–91	14–Jan–92	03–Aug–93	3
C04A1	South Boston Railroad Relocation	1,858	2	130	0	1,988	29–Jul–91	26–Nov–91	08–Jul–92	2
C04A2	I–90 BMIP Tunnel and VB 6	179,784	2	12,531	0	192,315	15–Apr–92	30–Nov–91	31–Dec–94	4
C24A1	Operations Control Center Complex	7,525	2	524	0	8,049	15–Oct–92	12–Feb–93	26–Sep–94	3
C25A1	Remediation – South Boston Haul Road	1,632	1	114	0	1,746	19–Aug–91	17–Dec–91	16–Mar–92	1
	SUBTOTAL SOUTH BOSTON	**423,728**				**453,262**				
EAST BOSTON / ITT										
C05A1	I–90 Immersed Tube Tunnel	200,916	2	14,004	0	214,920	26–May–91	23–Sep–91	19–Mar–94	3
C05B1	I–90 Tunnel Finishes	51,398	2	3,582	0	54,980	01–May–92	23–Aug–92	31–Dec–94	3
C07A1	I–90 BIF Tunnel including VB 7	276,544	4	19,275	0	295,819	30–Sep–91	30–Dec–91	25–Nov–94	4
C07B1	I–90 Porter Street Outfall Sewer Relocations	21,231	4	1,480	0	22,711	22–Aug–91	20–Dec–91	13–Apr–93	2
C07C1	I–90 East Boston Toll Plaza and Facilities	12,833	1	894	0	13,727	20–Jan–93	20–May–93	09–Dec–94	3
C07D1	Ramps E–T and T–AD	19,521	1	1,361	0	20,882	11–Jan–93	11–May–93	01–Nov–94	3
C07D2	Airport Interchange	37,972	1	2,647	0	40,619	05–Jul–94	02–Nov–94	24–Apr–96	2
C08A1	East Boston Airport Ramps	105,591	1	7,360	0	112,951	05–Oct–94	02–Feb–95	04–Jul–97	4
R05A2	Building Demolition, South Boston	1,831	1	128	0	1,959	16–Oct–90	04–Feb–91	05–Aug–91	2
R07A3	Demolition of Logan Airport Buildings	2,164	1	151	0	2,315	14–Nov–91	13–Jan–92	05–Jan–93	2
	SUBTOTAL EAST BOSTON/ITT	**730,001**				**780,882**				
SOUTH BAY										
C09A1	I–93/I–90 Interchange, I–93 NB including VB 1	325,897	2	22,715	0	348,612	06–Aug–93	04–Dec–93	31–Dec–98	6
C09A2	Demolish Rapid Service Press Building	1,643	2	115	0	1,758	12–Sep–92	26–Apr–93	25–Oct–93	2
C09B1	Fort Point Channel Crossing	185,168	1	12,906	0	198,074	01–Feb–94	01–Jun–94	29–Aug–98	6
C09C1	I–93/I–90 Interchange, I–93 SB	161,918	1	11,286	0	173,204	01–Aug–94	29–Nov–94	02–Sep–98	5
C09D1	I–93/I–90 Interchange Surface Restoration	20,166	1	1,406	0	21,572	03–Sep–97	30–Dec–97	30–Dec–98	2
C09E1	Fort Point Channel Restoration	3,358	1	234	0	3,592	03–Sep–97	31–Dec–97	31–Dec–98	2
C09F1	SSTC Ramps	10,000				10,000	12–Sep–92	10–Jan–93	04–Apr–94	2
C10A1	I–93/I–90 Interchange RR Track Relocation	32,800	2	2,286	0	35,086	06–Aug–93	04–Dec–93	31–Dec–98	6
C12A1	Massachusetts Avenue Interchange	95,462	1	6,654	0	102,116	31–Oct–93	28–Feb–94	05–Dec–97	5
C13A1	South Boston Bypass Road	29,960	2	2,088	0	32,048	06–Oct–92	03–Feb–93	10–Nov–94	3
C14A1	New East Side Interceptor Relocation	24,293	3	1,693	0	25,986	18–Jun–92	18–Jul–92	08–Feb–94	2
	SUBTOTAL SOUTH BAY	**890,665**				**952,047**				
CENTRAL ARTERY										
C11A1	I–93 Northbound Tunnel (Atlantic Avenue)	194,337	2	13,545	0	207,882	13–Jun–93	11–Oct–93	21–Feb–97	4
C14B1	Utility Relocations – North to Causeway	31,089	3	2,167	0	33,256	19–May–92	18–Jul–92	19–Apr–94	2
C14C1	Utility Relocations – Congress to Broad	38,246	3	2,666	0	40,912	22–Jul–92	20–Sep–92	23–Apr–94	2
C14C2	Utility Relocations – Broad to North	45,156	3	3,147	0	48,303	29–May–92	28–Jul–92	20–Mar–94	2
C14C3	Relocation Of 30–Inch Gas Line	3,735	3	260	0	3,995	19–Jan–92	03–Apr–92	19–Nov–92	2
C15A1	I–93 Central Artery, North to Chardon	337,577	1	23,529	0	361,106	19–Feb–94	19–Jun–94	14–Nov–98	6
C15A2	I–93 Central Artery, Chardon To Causeway	140,166	1	9,770	0	149,936	22–Dec–93	21–Apr–94	04–Nov–98	6
C15A3	I–93 Central Artery, VB 4	0	1	0	0	0				
C15C1	I–93 Central Area Surface Area Restoration	13,017	1	907	0	13,924	23–May–95	20–Sep–95	22–Sep–99	5
C16A1	I–93 Parcel 7 Parking Structure	0	2	0	0	0	16–Jul–93	13–Nov–93	16–May–95	2
C17A1	I–93 Central Artery, High to Milk	226,719	2	15,802	0	242,521	24–Dec–93	23–Apr–94	18–Aug–98	6
C17A2	I–93 Central Artery, Milk to North	196,479	2	13,695	0	210,174	20–Nov–93	20–Mar–94	21–Feb–98	5

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CA/T Construction Costs

Construction Contingency	7.0%
Overrun Contingency Factors	
Level 1 – 25% Design not Completed	13.0%
Level 2 – P/E Compl./25% Design Completed	11.0%
Level 3 – 75% Design Submitted	9.0%
Level 4 – PS&E Submitted	7.0%
Level 5 – Not Currently Used	5.0%
Complete	0.0%

Package	Description	Est. Proj. Cost 10/91 $'s	Level Of Engineering	Construction Contingency	Overrun Factor	Revised Total Cost	Early Obligate	Early Start	Early Complete	Duration FY's
C17A3	I–93 Central Artery, VB 3	45,563	2	3,176	0	48,739	01–Jan–94	01–May–94	17–Mar–98	5
C17A6	I–93 Central Artery, SB Congress to High	101,372	2	7,066	0	108,438	04–Apr–97	02–Aug–97	25–Feb–2000	3
C17B1	I–93 Central Artery, MBTA Blue Line Crossing	23,352	2	1,628	0	24,980	15–Jul–93	12–Nov–93	15–Apr–95	2
C18A1	I–93 Central Artery, Summer To Congress	54,592	1	3,805	0	58,397	05–Apr–97	03–Aug–97	01–Mar–2000	3
C18B1	I–93 Dewey Square Transformers	405	4	28	0	433	14–May–91	11–Sep–91	13–Jul–92	2
C18C1	I–93 Central Artery, Summer To Kneeland	33,867	1	2,361	0	36,228	05–Apr–97	03–Aug–97	01–Mar–2000	3
	SUBTOTAL CENTRAL ARTERY	1,485,672				1,589,223				
CENTRAL ARTERY NORTH										
C19A1	I–93 CANA Loop Connectors	62,355	2	4,346	0	66,701	06–Jun–93	04–Oct–93	06–Apr–95	2
C19B1	I–93 Viaduct North of the Charles River	314,908	1	21,949	0	336,857	03–Mar–94	01–Jul–94	29–Jun–98	4
C19C1	Restore Charles River Basin	0	1	0	0	0	15–Apr–97	13–Aug–97	10–Aug–98	2
C19D1	Central Artery Bridges Over the Charles River	0	1	0	0	0	29–May–94	26–Sep–94	16–Oct–97	4
C19E1	Leverett Circle/Storrow Drive	0	1	0	0	0	27–Feb–94	27–Jun–94	17–Jan–97	4
C19F1	Charles River Basin Ferry and Wharf Facilities	0	1	0	0	0	15–Feb–94	15–Jun–94	16–Jun–95	2
C19G1	Charles River Tunnel/Tunnels North of River	0	1	0	0	0				
C19X	Costs Associated with Scheme 8.1.D	340,000	1	23,698	0	363,698	01–Jul–93	01–Jan–94	28–Jun–2000	7
	SUBTOTAL CENTRAL ARTERY NORTH	717,263				767,256				
PROJECT WIDE										
C20A1	I–90 Furnish and Install Vent Fans	11,396	3	794	0	12,190	04–Apr–92	03–Jul–92	20–Nov–94	3
C20A2	I–90 Electrical General Contractor	24,081	3	1,678	0	25,759	04–Apr–92	03–Jul–92	20–Nov–94	3
C20B1	I–93 Furnish and Install Vent Fans	23,210	2	1,618	0	24,828	16–Sep–93	14–Jan–94	30–Dec–99	7
C20B2	I–93 Electrical General Contractor	61,749	2	4,304	0	66,053	16–Sep–93	14–Jan–94	30–Dec–99	7
C20C2	Tunnel Test Site Prep and Facility Mods	13,270	1	925	0	14,195	14–Aug–90	12–Dec–90	11–May–92	2
C20C8	Tunnel Test Fans, Instrumentation, Testing	13,270	1	925	0	14,195	16–Oct–91	13–Feb–92	23–May–93	2
C21A2	Materials Disposal System	125,445	2	8,744	0	134,189	02–Jun–92	31–Aug–92	31–May–97	5
C21B1	Materials Processing System	64,898	4	4,523	0	69,421	25–Sep–91	01–Oct–92	01–Oct–98	7
C21C1	Spectacle Island Surface Restoration	4,500	2	314	0	4,814	01–Jul–97	29–Oct–97	29–Oct–98	2
C22A1	I–90 Furnish and Install IPCS	56,993	2	3,972	0	60,965	06–Sep–92	04–Jan–93	30–Dec–94	3
C22A2	I–93 Furnish and Install IPCS	35,738	2	2,491	0	38,229	04–Oct–93	01–Feb–94	05–Dec–99	7
C22A3	Interim Control Center	1,852				1,852	21–May–92	27–Jul–92	05–Oct–93	2
C00B	Pest Control	3,134				3,134	01–May–91	30–Jul–91	04–Jun–99	8
	NET Interoffice Network Mods/Steam Plant Mods	17,582				17,582	08–Aug–91	08–Aug–91	08–Aug–91	1
	SUBTOTAL PROJECT WIDE	457,118				487,406				
	Totals	4,704,447				5,030,077				
	Cumulative Total									

CONFIDENTIAL -- PRELIMINARY DRAFT

CA/T Construction Costs

Construction Contingency
Overrun Contingency Factors
- Level 1 – 25% Design not Completed
- Level 2 – P/E Compl./25% Design Completed
- Level 3 – 75% Design Submitted
- Level 4 – PS&E Submitted
- Level 5 – Not Currently Used

Complete

Package	Description	Late				Funding Splits – %			
		Obligate	Start	Complete	Duration FY's	Federal IC	Federal NON–IC	State/ Local	Total
SOUTH BOSTON									
C01A1	I–90 South Boston Interchange	02–Dec–93	01–Apr–94	01–Jan–99	6	90%		10%	100%
C01B1	Vent Building (VB) 5	02–Dec–95	31–Dec–96	01–Jan–99	3	90%		10%	100%
C02A1	South Boston Haul Road	16–Sep–91	14–Jan–92	01–Aug–93	3	36%	48%	16%	100%
C04A1	South Boston Railroad Relocation	29–Jul–91	26–Nov–91	08–Jul–92	2	90%		10%	100%
C04A2	I–90 BMIP Tunnel and VB 6	15–Apr–92	16–Jul–92	20–May–95	3	90%		10%	100%
C24A1	Operations Control Center Complex	21–Dec–92	20–May–93	01–Jan–95	3	90%		10%	100%
C25A1	Remediation – South Boston Haul Road	20–Jul–91	17–Dec–91	16–Mar–92	1	68%	20%	13%	101%
	SUBTOTAL SOUTH BOSTON								
EAST BOSTON / ITT									
C05A1	I–90 Immersed Tube Tunnel	26–May–91	23–Sep–91	19–Mar–94	3	90%		10%	100%
C05B1	I–90 Tunnel Finishes	01–May–92	23–Aug–92	01–Jan–95	3	90%		10%	100%
C07A1	I–90 BIF Tunnel Including VB 7	30–Sep–91	08–May–92	01–Jan–95	4	90%		10%	100%
C07B1	I–90 Porter Street Outfall Sewer Relocations	22–Aug–91	20–Dec–91	13–Apr–93	2	90%		10%	100%
C07C1	I–90 East Boston Toll Plaza and Facilities	20–Jan–93	11–Jun–93	01–Jan–95	3	90%		10%	100%
C07D1	Ramps E–T and T–AD	11–Jan–93	10–Jul–93	01–Jan–95	2	90%		10%	100%
C07D2	Airport Interchange	05–Jul–94	10–Jul–97	01–Jan–99	2	90%		10%	100%
C08A1	East Boston Airport Ramps	05–Oct–94	31–Jul–96	01–Jan–99	3		80%	20%	100%
R05A2	Building Demolition, South Boston	16–Oct–90		30–Jun–00		90%		10%	100%
R07A3	Demolition of Logan Airport Buildings					90%		10%	100%
	SUBTOTAL EAST BOSTON/ITT								
SOUTH BAY									
C09A1	I–93/I–90 Interchange, I–93 NB Including VB 1	06–Aug–93	04–Dec–93	06–Dec–96	4	90%		10%	100%
C09A2	Demolish Rapid Service Press Building	12–Sep–92				90%		10%	100%
C09B1	Fort Point Channel Crossing	01–Feb–94	03–Oct–94	01–Jan–96	2	90%		10%	100%
C09C1	I–93/I–90 Interchange, I–93 SB	01–Aug–94	08–Nov–95	01–Jan–99	4	90%		10%	100%
C09D1	I–93/I–90 Interchange Surface Restoration	03–Sep–97	01–Jan–98	01–Jan–99	2	90%		10%	100%
C09E1	Fort Point Channel Restoration	03–Sep–97	01–Jan–98	01–Jan–99	2	90%		10%	100%
C09F1	SSTC Ramps	12–Sep–92				90%		10%	100%
C10A1	I–93/I–90 Interchange RR Track Relocation	06–Aug–93	04–Dec–93	01–Jan–99	6	90%		10%	100%
C12A1	Massachusetts Avenue Interchange	31–Oct–93	26–Dec–94	02–Oct–98	5		80%	20%	100%
C13A1	South Boston Bypass Road	06–Oct–92	27–Mar–93	01–Jan–95	3		80%	20%	100%
C14A1	New East Side Interceptor Relocation	18–Jun–92	27–Oct–92	20–May–94	2	90%		10%	100%
	SUBTOTAL SOUTH BAY								
CENTRAL ARTERY									
C11A1	I–93 Northbound Tunnel (Atlantic Avenue)	13–Jun–93	20–Jan–94	02–Jun–97	4	90%		10%	100%
C14B1	Utility Relocations – North to Causeway	19–May–92	03–Jul–92	04–Apr–94	2		80%	20%	100%
C14C1	Utility Relocations – Congress to Broad	22–Jul–92	28–Jul–92	28–Feb–94	2	23%	60%	17%	100%
C14C2	Utility Relocations – Broad to North	29–May–92	08–Jul–92	28–Feb–94	2	23%	60%	17%	100%
C14C3	Relocation Of 30–Inch Gas Line	19–Jan–92	09–Feb–92	26–Sep–92	2	23%	60%	17%	100%
C15A1	I–93 Central Artery, North to Chardon	19–Feb–94	04–May–94	02–Jun–97	4		80%	20%	100%
C15A2	I–93 Central Artery, Chardon To Causeway	22–Dec–93	04–Apr–94	02–Jun–97	4		80%	20%	100%
C15A3	I–93 Central Artery, VB 4						80%	20%	100%
C15C1	I–93 Central Area Surface Area Restoration	23–May–95	29–Dec–95	31–Dec–99	5	45%	40%	15%	100%
C16A1	I–93 Parcel 7 Parking Structure	16–Jul–93	01–Dec–95	02–Jun–97	2		80%	20%	100%
C17A1	I–93 Central Artery, High to Milk	24–Dec–93	28–Feb–94	02–Jun–97	4		80%	20%	100%
C17A2	I–93 Central Artery, Milk to North	20–Nov–93	21–Mar–94	02–Jun–97	4		80%	20%	100%

CA/T Construction Costs

Construction Contingency
Overrun Contingency Factors
- Level 1 – 25% Design not Completed
- Level 2 – P/E Compl./25% Design Completed
- Level 3 – 75% Design Submitted
- Level 4 – PS&E Submitted
- Level 5 – Not Currently Used

Complete

Package	Description	Late				Funding Splits – %			
		Obligate	Start	Complete	Duration FY's	Federal IC	Federal NON–IC	State/ Local	Total
C17A3	I–93 Central Artery, VB 3	01–Jan–94	12–Nov–94	02–Jun–97	3		80%	20%	100%
C17A6	I–93 Central Artery, SB Congress to High	04–Apr–97					80%	20%	100%
C17B1	I–93 Central Artery, MBTA Blue Line Crossing	15–Jul–93	04–Jul–95	04–Dec–96	2		80%	20%	100%
C18A1	I–93 Central Artery, Summer To Congress	05–Apr–97	02–Jun–97	02–Oct–98	3	90%		10%	100%
C18B1	I–93 Dewey Square Transformers	14–May–91	11–Sep–91	21–Jul–92	2	90%		10%	100%
C18C1	I–93 Central Artery, Summer To Kneeland	05–Apr–97	02–Jun–97	02–Oct–98	3	90%		10%	100%
	SUBTOTAL CENTRAL ARTERY								
CENTRAL ARTERY NORTH									
C19A1	I–93 CANA Loop Connectors	06–Jun–93	01–Dec–95	02–Jun–97	2	90%		10%	100%
C19B1	I–93 Viaduct North of the Charles River	03–Mar–94	30–Apr–94	02–Jun–97	4	90%		10%	100%
C19C1	Restore Charles River Basin	15–Apr–97	03–Jan–99	31–Dec–99	2	90%		10%	100%
C19D1	Central Artery Bridges Over the Charles River	29–May–94	13–Feb–95	02–Jun–97	3	90%		10%	100%
C19E1	Leverett Circle/Storrow Drive	27–Feb–94	10–Nov–94	02–Jun–97	3	90%		10%	100%
C19F1	Charles River Basin Ferry and Wharf Facilities	15–Feb–94	30–Dec–98	31–Dec–99	2	90%		10%	100%
C19G1	Charles River Tunnel/Tunnels North of River			24–Jan–03		90%		10%	100%
C19X	Costs Associated with Scheme 8.1.D			24–Jan–03		0%		100%	100%
	SUBTOTAL CENTRAL ARTERY NORTH								
PROJECT WIDE									
C20A1	I–90 Furnish and Install Vent Fans	04–Apr–92	14–Aug–92	01–Jan–95	3	90%		10%	100%
C20A2	I–90 Electrical General Contractor	04–Apr–92	14–Aug–92	01–Jan–95	3	90%		10%	100%
C20B1	I–93 Furnish and Install Vent Fans	16–Sep–93	14–Jan–94	16–Feb–2001	8	68%	20%	13%	100%
C20B2	I–93 Electrical General Contractor	16–Sep–93	14–Jan–94	16–Feb–2001	8	68%	20%	13%	100%
C20C2	Tunnel Test Site Prep and Facility Mods	14–Aug–90	12–Dec–90	31–Mar–92	2	90%		10%	100%
C20C8	Tunnel Test Fans, Instrumentation, Testing	16–Oct–91	23–Nov–98	31–Mar–93	(5)	90%		10%	100%
C21A2	Materials Disposal System	02–Jun–92	30–May–99	03–Mar–2000	2	68%	20%	13%	100%
C21B1	Materials Processing System	25–Sep–91	31–Dec–92	01–Jan–99	7	68%	20%	13%	100%
C21C1	Spectacle Island Surface Restoration	01–Jul–97	04–Mar–99	03–Mar–2000	2	68%	20%	13%	100%
C22A1	I–90 Furnish and Install IPCS	06–Sep–92	06–Jan–93	01–Jan–95	3	90%		10%	100%
C22A2	I–93 Furnish and Install IPCS	04–Oct–93	26–Feb–94	13–Mar–2001	8	90%		10%	100%
C22A3	Interim Control Center	21–May–92				45%	40%	15%	100%
C00B	Pest Control					68%	20%	13%	100%
	NET Interoffice Network Mods/Steam Plant Mods	08–Aug–91	08–Aug–91	08–Aug–91	1	80%		20%	
	SUBTOTAL PROJECT WIDE								
	Totals								
	Cumulative Total								

CONFIDENTIAL -- PRELIMINARY DRAFT

CA/T Construction Costs

Construction Contingency
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Complete

Package	Description	Spent Jul–85 Jun–91	Projected Costs by State Fiscal Year –– Inflated Dollars Jul–91 Jun–92	Jul–92 Jun–93	Jul–93 Jun–94	Jul–94 Jun–95	Jul–95 Jun–96	Jul–96 Jun–97	Jul–97 Jun–98	Jul–98 Jun–99	Jul–99 Jun–2000	Jun–2000 Jun–2001
SOUTH BOSTON												
C01A1	I–90 South Boston Interchange	0.0	0.0	0.0	39.0	40.3	41.7	43.2	44.7	46.3	0.0	0.0
C01B1	Vent Building (VB) 5	0.0	0.0	0.0	0.0	0.0	7.3	7.6	7.9	0.0	0.0	0.0
C02A1	South Boston Haul Road	0.0	3.9	4.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C04A1	South Boston Railroad Relocation	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C04A2	I–90 BMIP Tunnel and VB 6	0.0	48.1	49.8	51.5	53.3	0.0	0.0	0.0	0.0	0.0	0.0
C24A1	Operations Control Center Complex	0.0	0.0	2.8	2.9	3.0	0.0	0.0	0.0	0.0	0.0	0.0
C25A1	Remediation – South Boston Haul Road	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL SOUTH BOSTON	0.0	54.7	57.6	97.5	96.6	49.1	50.8	52.6	46.3	0.0	0.0
EAST BOSTON / ITT												
C05A1	I–90 Immersed Tube Tunnel	0.0	71.6	74.1	76.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C05B1	I–90 Tunnel Finishes	0.0	0.0	19.0	19.6	20.3	0.0	0.0	0.0	0.0	0.0	0.0
C07A1	I–90 BIF Tunnel Including VB 7	0.0	74.0	76.5	79.2	82.0	0.0	0.0	0.0	0.0	0.0	0.0
C07B1	I–90 Porter Street Outfall Sewer Relocations	0.0	11.4	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C07C1	I–90 East Boston Toll Plaza and Facilities	0.0	0.0	4.7	4.9	5.1	0.0	0.0	0.0	0.0	0.0	0.0
C07D1	Ramps E–T and T–AD	0.0	0.0	7.2	7.5	7.7	0.0	0.0	0.0	0.0	0.0	0.0
C07D2	Airport Interchange	0.0	0.0	0.0	0.0	22.5	23.3	0.0	0.0	0.0	0.0	0.0
C08A1	East Boston Airport Ramps	0.0	0.0	0.0	0.0	31.3	32.4	33.5	34.7	0.0	0.0	0.0
R05A2	Building Demolition, South Boston	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R07A3	Demolition of Logan Airport Buildings	0.0	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL EAST BOSTON/ITT	1.0	159.1	194.5	188.0	168.9	55.7	33.5	34.7	0.0	0.0	0.0
SOUTH BAY												
C09A1	I–93/I–90 Interchange, I–93 NB Including VB 1	0.0	0.0	0.0	62.2	64.4	66.7	69.0	71.4	73.9	0.0	0.0
C09A2	Demolish Rapid Service Press Building	0.0	0.0	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C09B1	Fort Point Channel Crossing	0.0	0.0	0.0	35.4	36.6	37.9	39.2	40.6	42.0	0.0	0.0
C09C1	I–93/I–90 Interchange, I–93 SB	0.0	0.0	0.0	0.0	38.4	39.8	41.1	42.6	44.1	0.0	0.0
C09D1	I–93/I–90 Interchange Surface Restoration	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.3	13.7	0.0	0.0
C09E1	Fort Point Channel Restoration	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.3	0.0	0.0
C09F1	SSTC Ramps	0.0	0.0	5.2	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C10A1	I–93/I–90 Interchange RR Track Relocation	0.0	0.0	0.0	6.3	6.5	6.7	6.9	7.2	7.4	0.0	0.0
C12A1	Massachusetts Avenue Interchange	0.0	0.0	0.0	21.9	22.6	23.4	24.3	25.1	0.0	0.0	0.0
C13A1	South Boston Bypass Road	0.0	0.0	11.1	11.4	11.8	0.0	0.0	0.0	0.0	0.0	0.0
C14A1	New East Side Interceptor Relocation	0.0	0.0	13.4	13.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL SOUTH BAY	0.0	0.0	30.6	157.4	180.4	174.5	180.6	202.3	183.4	0.0	0.0
CENTRAL ARTERY												
C11A1	I–93 Northbound Tunnel (Atlantic Avenue)	0.0	0.0	0.0	55.7	57.6	59.6	61.7	0.0	0.0	0.0	0.0
C14B1	Utility Relocations – North to Causeway	0.0	0.0	17.2	17.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C14C1	Utility Relocations – Congress to Broad	0.0	0.0	21.2	21.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C14C2	Utility Relocations – Broad to North	0.0	0.0	25.0	25.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C14C3	Relocation Of 30–Inch Gas Line	0.0	2.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C15A1	I–93 Central Artery, North to Chardon	0.0	0.0	0.0	64.5	66.7	69.1	71.5	74.0	76.6	0.0	0.0
C15A2	I–93 Central Artery, Chardon To Causeway	0.0	0.0	0.0	26.8	27.7	28.7	29.7	30.7	31.8	0.0	0.0
C15A3	I–93 Central Artery, VB 4											
C15C1	I–93 Central Area Surface Area Restoration	0.0	0.0	0.0	0.0	0.0	3.2	3.3	3.4	3.5	3.7	0.0
C16A1	I–93 Parcel 7 Parking Structure	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C17A1	I–93 Central Artery, High to Milk	0.0	0.0	0.0	43.3	44.8	46.4	48.0	49.7	51.4	0.0	0.0
C17A2	I–93 Central Artery, Milk to North	0.0	0.0	0.0	45.0	46.6	48.2	49.9	51.7	0.0	0.0	0.0

CA/T Construction Costs

Construction Contingency
Overrun Contingency Factors
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- Level 2 – P/E Compl./25% Design Completed
- Level 3 – 75% Design Submitted
- Level 4 – PS&E Submitted
- Level 5 – Not Currently Used

Complete

Package	Description	Spent Jul-85 Jun-91	Projected Costs by State Fiscal Year -- Inflated Dollars Jul-91 Jun-92	Jul-92 Jun-93	Jul-93 Jun-94	Jul-94 Jun-95	Jul-95 Jun-96	Jul-96 Jun-97	Jul-97 Jun-98	Jul-98 Jun-99	Jul-99 Jun-2000	Jun-2000 Jun-2001
C17A3	I-93 Central Artery, VB 3	0.0	0.0	0.0	10.4	10.8	11.2	11.6	12.0	0.0	0.0	0.0
C17A6	I-93 Central Artery, SB Congress to High	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.4	46.0	47.6	0.0
C17B1	I-93 Central Artery, MBTA Blue Line Crossing	0.0	0.0	0.0	13.4	13.8	0.0	0.0	0.0	0.0	0.0	0.0
C18A1	I-93 Central Artery, Summer To Congress	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.9	24.8	25.6	0.0
C18B1	I-93 Dewey Square Transformers	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C18C1	I-93 Central Artery, Summer To Kneeland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.8	15.4	15.9	0.0
	SUBTOTAL CENTRAL ARTERY	0.0	2.2	65.7	324.7	268.1	266.4	275.7	304.7	249.5	92.8	0.0
CENTRAL ARTERY NORTH												
C19A1	I-93 CANA Loop Connectors	0.0	0.0	0.0	35.7	37.0	0.0	0.0	0.0	0.0	0.0	0.0
C19B1	I-93 Viaduct North of the Charles River	0.0	0.0	0.0	0.0	93.4	96.6	100.0	103.5	0.0	0.0	0.0
C19C1	Restore Charles River Basin	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C19D1	Central Artery Bridges Over the Charles River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C19E1	Leverett Circle/Storrow Drive	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C19F1	Charles River Basin Ferry and Wharf Facilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C19G1 C19X	Charles River Tunnel/Tunnels North of River Costs Associated with Scheme 8.1.D	0.0	0.0	0.0	55.7	57.6	59.6	61.7	63.9	66.1	68.4	0.0
	SUBTOTAL CENTRAL ARTERY NORTH	0.0	0.0	0.0	91.4	188.0	156.3	161.7	167.4	66.1	68.4	0.0
PROJECT WIDE												
C20A1	I-90 Furnish and Install Vent Fans	0.0	0.0	4.2	4.4	4.5	0.0	0.0	0.0	0.0	0.0	0.0
C20A2	I-90 Electrical General Contractor	0.0	0.0	8.9	9.2	9.5	0.0	0.0	0.0	0.0	0.0	0.0
C20B1	I-93 Furnish and Install Vent Fans	0.0	0.0	0.0	3.8	3.9	4.1	4.2	4.4	4.5	4.7	0.0
C20B2	I-93 Electrical General Contractor	0.0	0.0	0.0	10.1	10.5	10.8	11.2	11.6	12.0	12.4	0.0
C20C2	Tunnel Test Site Prep and Facility Mods	7.1	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C20C8	Tunnel Test Fans, Instrumentation, Testing	0.0	7.1	7.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C21A2	Materials Disposal System	0.0	0.0	27.8	28.7	29.8	30.8	31.9	0.0	0.0	0.0	0.0
C21B1	Materials Processing System	0.0	0.0	10.3	10.6	11.0	11.4	11.8	12.2	12.6	0.0	0.0
C21C1	Spectacle Island Surface Restoration	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	3.1	0.0	0.0
C22A1	I-90 Furnish and Install IPCS	0.0	0.0	21.0	21.8	22.5	0.0	0.0	0.0	0.0	0.0	0.0
C22A2	I-93 Furnish and Install IPCS	0.0	0.0	0.0	5.9	6.1	6.3	6.5	6.7	6.9	7.2	0.0
C22A3	Interim Control Center	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
C00B	Pest Control	0.0	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.0	0.0
	NET Interoffice Network Mods/Steam Plant Mods	0.0	17.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL PROJECT WIDE	7.1	32.2	80.9	95.9	98.2	63.8	66.0	38.3	39.6	24.3	0.0
	Totals	8.1	248.2	429.3	954.8	1,000.2	765.7	768.4	800.0	584.9	185.5	0.0
	Cumulative Total	8.1	256.3	685.6	1,640.3	2,640.6	3,406.2	4,174.6	4,974.6	5,559.5	5,745.0	5,745.0

CONFIDENTIAL -- PRELIMINARY DRAFT

CA/T Federal IC Funding

Package	Description	Est. Proj. Cost 10/91 $'s	Revised Total Cost	Spent Prior to SFY 1992	Projected Costs by State Fiscal Year -- Inflated Dollars									
					Jul-91 Jun-92	Jul-92 Jun-93	Jul-93 Jun-94	Jul-94 Jun-95	Jul-95 Jun-96	Jul-96 Jun-97	Jul-97 Jun-98	Jul-98 Jun-99	Jul-99 Jun-2000	Jun-2000 Jun-2001
SOUTH BOSTON														
001A	I-90 SOUTH BOSTON INTERCHANGE	226,797	239,597	0.0	3.2	38.1	38.5	36.3	37.6	38.9	40.2	41.7	0.0	0.0
001B	VENT BUILDING 5 SUPERSTRUCTURE	17,234	18,361	0.0	0.0	0.6	0.6	0.0	6.6	6.8	7.1	0.0	0.0	0.0
002A	SOUTH BOSTON HAUL ROAD	9,301	9,575	0.4	6.4	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
004A	I-90 BMIP TUNNEL	28,941	29,057	5.2	22.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04A2	I-90 BMIP Tunnel and VB 6	161,806	173,083	0.0	43.3	44.8	46.4	48.0	0.0	0.0	0.0	0.0	0.0	0.0
024A	SERVICE/ADMINISTRATION COMPLEX	9,777	10,249	0.0	1.5	4.1	2.6	2.7	0.0	0.0	0.0	0.0	0.0	0.0
25A1	Remediation - South Boston Haul Road	1,110	1,187	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL SOUTH BOSTON	454,965	481,109	5.6	78.4	89.9	89.5	87.0	44.2	45.7	47.3	41.7	0.0	0.0
EAST BOSTON / ITT														
005A	I-90 IMMERSED TUBE TUNNEL	185,528	198,132	1.2	67.9	66.7	69.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
005B	I-90 TUNNEL FINISHES	48,350	51,574	2.1	0.0	17.1	17.7	18.3	0.0	0.0	0.0	0.0	0.0	0.0
007A	I-90 BIRD ISLAND FLATS (BIF)	276,787	294,134	12.7	81.7	68.9	71.3	73.8	0.0	0.0	0.0	0.0	0.0	0.0
007B	I-90 PORTER STREET OUTFALL SEWERS	22,107	23,439	2.5	10.7	10.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
007C	I-90 EAST BOSTON TOLL PLAZA AND FACILITIE	12,617	13,422	0.0	0.5	4.9	4.4	4.6	0.0	0.0	0.0	0.0	0.0	0.0
007D	AIRPORT INTERCHANGE	28,275	29,500	0.0	1.0	15.5	7.8	6.9	0.0	0.0	0.0	0.0	0.0	0.0
07D2	Airport Interchange	34,175	36,557	0.0	0.0	0.0	0.0	20.3	21.0	0.0	0.0	0.0	0.0	0.0
008A	EAST BOSTON AIRPORT/ROUTE 1A INTERCHAN	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05A2	Building Demolition, South Boston	1,648	1,763	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07A3	Demolition of Logan Airport Buildings	1,948	2,083	0.0	1.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL EAST BOSTON/ITT	611,435	650,605	19.5	163.8	184.7	170.3	123.9	21.0	0.0	0.0	0.0	0.0	0.0
SOUTH BAY														
009A	SOUTH BAY NB TUNNEL, WEST SHORE	344,681	365,125	0.0	36.6	7.6	63.9	58.0	60.0	62.1	64.3	66.5	0.0	0.0
09A2	Demolish Rapid Service Press Building	1,479	1,582	0.0	0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
009B	SOUTH BAY FORT POINT CHANNEL CROSSING	189,914	201,530	0.0	0.0	5.5	51.0	32.9	34.1	35.3	36.5	37.8	0.0	0.0
009C	SOUTH BAY, RANDOLPH TO KNEELAND STREE	163,136	173,293	0.0	0.0	5.6	7.0	40.6	35.8	37.0	38.3	39.7	0.0	0.0
009D	SOUTH BAY INTERSECTION RESTORATION	19,142	20,407	0.0	0.0	0.0	0.5	0.6	0.0	0.0	11.9	12.4	0.0	0.0
009E	FORT POINT CHANNEL RESTORATION	4,303	4,514	0.0	0.0	0.7	0.7	0.0	0.0	0.0	2.0	2.1	0.0	0.0
09F1	SSTC Ramps	9,000	9,000	0.0	0.0	4.7	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
010A	I-93 SOUTH BAY TEMPORARY BRIDGE UNDERP	36,365	38,422	0.0	6.8	0.0	5.6	5.8	6.0	6.3	6.5	6.7	0.0	0.0
012A	I-93 MASS AVENUE INTERCHANGE	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
013A	SOUTH BOSTON BYPASS ROAD	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
014A	NEW EASTSIDE INTERCEPT RELOCATION	24,800	26,324	1.7	1.3	12.1	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL SOUTH BAY	792,820	840,196	1.7	44.8	37.0	147.0	137.9	135.9	140.7	159.5	165.1	0.0	0.0
CENTRAL ARTERY														
011A	I-93 ATLANTIC AVENUE	189,908	202,099	0.0	5.6	9.8	50.1	51.9	53.7	55.6	0.0	0.0	0.0	0.0
014B	I-93 CENTRAL ARTERY UTILITY RELOCATION	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
014C	I-93 CENTRAL ARTERY UTILITY RELOCATION	14,972	15,585	0.4	5.7	4.9	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14C2	Utility Relocations - Broad to North	10,386	11,110	0.0	0.0	5.7	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14C3	Relocation Of 30-Inch Gas Line	859	919	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
015A	I-93 CENTRAL ARTERY, NORTH TO CAUSEWAY	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15A2	I-93 Central Artery, Chardon To Causeway	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15A3	I-93 Central Artery, VB 4	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
015C	I-93 CENTRAL ARTERY SURFACE RESTORATIO	5,858	6,266	0.0	0.0	0.0	0.0	0.0	1.4	1.5	1.5	1.6	1.7	0.0
016A	PARCEL 7	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
017A	I-93 CENTRAL ARTERY, CONGRESS TO NORTH	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17A2	I-93 Central Artery, Milk to North	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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17A3	I-93 Central Artery, VB 3	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17A6	I-93 Central Artery, SB Congress to High	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
017B	I-93 CENTRAL ARTERY, MBTA BLUE LINE CROS	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
018A/C	I-93 DEWEY SQUARE TUNNEL	51,558	54,983	0.0	0.0	0.8	0.9	0.9	0.0	0.0	21.5	22.3	23.1	0.0
018B	I-93 DEWEY SQUARE TRANSFORMERS	365	390	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
018C	I-93 SUMMER TO KNEELAND	31,918	34,043	0.0	0.0	0.5	0.5	0.5	0.0	0.0	13.4	13.8	14.3	0.0
	SUBTOTAL CENTRAL ARTERY	305,824	325,394	0.4	12.0	22.4	62.5	53.3	55.1	57.0	36.4	37.7	39.0	0.0
CENTRAL ARTERY NORTH														
019A	I-93 CENTRAL ARTERY NORTH OF CAUSEWAY	80,868	84,780	0.0	2.0	23.5	32.2	33.3	0.0	0.0	0.0	0.0	0.0	0.0
019B	I-93 VIADUCTS AND RAMPS NORTH OF CHARL	302,816	322,570	0.0	0.0	10.0	10.4	84.0	87.0	90.0	93.2	0.0	0.0	0.0
019C	CHARLES RIVER BASIN RESTORATION	36	36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019D	CHARLES RIVER BRIDGES AND VIADUCTS	103	103	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019E	SCIENCE PARK UNDERPINNING	216	216	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019F	CHARLES RIVER BASIN FERRY/WHARF	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019G	CHARLES RIVER AND TUNNELS N. OF RIVER	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019X	COSTS ASSOCIATED WITH SCHEME 8.1.D	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL CENTRAL ARTERY NORTH	384,039	407,705	0.0	2.0	33.7	42.7	117.3	87.0	90.0	93.2	0.0	0.0	0.0
PROJECTWIDE														
	Management Consultant/Preliminary Engineering	144,993	144,993	36.2	36.2	36.2	36.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Management Consultant/Construction Support	154,145	154,145	0.0	6.5	12.6	25.9	27.1	21.1	21.2	21.6	15.1	3.0	0.0
	Geotechnical Services	7,297	7,297	2.9	1.5	1.5	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
020A	I-90 MECHANICAL/ELECTRICAL	14,971	15,685	2.4	2.4	3.8	3.9	4.1	0.0	0.0	0.0	0.0	0.0	0.0
20A2	I-90 Electrical General Contractor	21,673	23,184	0.0	0.0	8.0	8.3	8.6	0.0	0.0	0.0	0.0	0.0	0.0
020B	I-93 MECHANICAL/ELECTRICAL	23,331	24,423	2.6	2.6	2.6	2.6	2.7	2.7	2.8	2.9	3.0	3.2	0.0
20B2	I-93 Electrical General Contractor	41,681	44,586	0.0	0.0	0.0	6.8	7.1	7.3	7.6	7.8	8.1	8.4	0.0
20C2	Tunnel Test Site Prep and Facility Mods	11,943	12,775	6.4	6.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20C8	Tunnel Test Fans, Instrumentation, Testing	11,943	12,775	0.0	6.4	6.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
021A	MATERIALS DISPOSAL SYSTEM	90,064	95,966	0.0	3.4	20.8	19.4	20.1	20.8	21.5	0.0	0.0	0.0	0.0
021B	MATERIALS PROCESSING SYSTEM	55,785	58,839	0.0	12.0	6.9	7.2	7.4	7.7	8.0	8.2	8.5	0.0	0.0
021C	SPECTACLE ISLAND SURFACE RESTORATION	3,853	4,064	0.0	0.0	0.4	0.4	0.0	0.0	0.0	2.0	2.1	0.0	0.0
022A	INTEGRATED PROJECT CONTROLS (IPCS)	62,903	66,478	2.9	2.9	21.9	22.7	20.3	0.0	0.0	0.0	0.0	0.0	0.0
22A2	I-93 Furnish and Install IPCS	32,164	34,406	0.0	0.0	0.0	5.3	5.4	5.6	5.8	6.0	6.3	6.5	0.0
22A3	Interim Control Center	833	833	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
00B	Pest Control	2,115	2,115	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.0
025A	ASSESSMENT AND REMEDIATION	6,104	6,104	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	NET Interoffice Network Mods/Steam Plant Mods	14,066	14,066	0.0	14.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025C	PROJECT CONSERVATOR - 3RD WORK PROGR	38	38	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025D	PROJECT CONSERVATOR - 2ND WORK PROGR	981	981	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025E	PHASE III ARCHAEOLOGY - I-93/I-90	1,742	1,742	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025F	HABS/HAER DOCUMENTATION	900	900	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
025G	PHASE III ARCHAEOLOGY - MATERIALS DISPO	99	99	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025H	PROJECT CONSERVATOR - 3RD WORK PROGR	944	944	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
025S	PROJECTWIDE SAFETY CONSULTANT	3,480	3,480	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025T	PUBLIC INFORMATION CONTRACT	1,350	1,350	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL PROJECT WIDE	709,396	732,267	60.7	101.0	122.3	141.9	104.0	65.8	67.2	49.0	43.4	21.0	0.0
	Totals	3,258,478	3,437,275	87.9	402.0	490.0	653.9	623.3	408.8	400.6	385.4	287.9	60.1	0.0
	Cumulative Totals			87.9	489.9	979.9	1,633.8	2,257.1	2,665.9	3,066.5	3,451.9	3,739.8	3,799.9	3,799.9

CA/T Federal NON IC Funding

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SOUTH BOSTON														
001A	I-90 SOUTH BOSTON INTERCHANGE	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
001B	VENT BUILDING 5 SUPERSTRUCTURE	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
002A	SOUTH BOSTON HAUL ROAD	12,401	12,767	0.5	8.5	1.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
004A	I-90 BMIP TUNNEL	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04A2	I-90 BMIP Tunnel and VB 6	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
024A	SERVICE/ADMINISTRATION COMPLEX	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25A1	Remediation - South Boston Haul Road	326	349	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL SOUTH BOSTON	12,727	13,116	0.5	8.9	1.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EAST BOSTON / ITT														
005A	I-90 IMMERSED TUBE TUNNEL	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
005B	I-90 TUNNEL FINISHES	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
007A	I-90 BIRD ISLAND FLATS (BIF)	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
007B	I-90 PORTER STREET OUTFALL SEWERS	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
007C	I-90 EAST BOSTON TOLL PLAZA AND FACILITIE	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
007D	AIRPORT INTERCHANGE	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07D2	Airport Interchange	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
008A	EAST BOSTON AIRPORT/ROUTE 1A INTERCHAN	121,132	127,020	0.0	32.0	1.6	1.7	26.8	25.9	26.8	27.8	0.0	0.0	0.0
05A2	Building Demolition, South Boston	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07A3	Demolition of Logan Airport Buildings	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL EAST BOSTON/ITT	121,132	127,020	0.0	32.0	1.6	1.7	26.8	25.9	26.8	27.8	0.0	0.0	0.0
SOUTH BAY														
009A	SOUTH BAY NB TUNNEL, WEST SHORE	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09A2	Demolish Rapid Service Press Building	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
009B	SOUTH BAY FORT POINT CHANNEL CROSSING	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
009C	SOUTH BAY, RANDOLPH TO KNEELAND STREE	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
009D	SOUTH BAY INTERSECTION RESTORATION	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
009E	FORT POINT CHANNEL RESTORATION	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09F1	SSTC Ramps	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
010A	I-93 SOUTH BAY TEMPORARY BRIDGE UNDERP	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
012A	I-93 MASS AVENUE INTERCHANGE	91,781	97,104	0.0	0.0	13.8	19.8	18.1	18.7	19.4	20.1	0.0	0.0	0.0
013A	SOUTH BOSTON BYPASS ROAD	34,901	36,572	0.0	1.5	18.6	9.2	9.5	0.0	0.0	0.0	0.0	0.0	0.0
014A	NEW EASTSIDE INTERCEPT RELOCATION	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL SOUTH BAY	126,682	133,675	0.0	1.5	32.4	28.9	27.6	18.7	19.4	20.1	0.0	0.0	0.0
CENTRAL ARTERY														
011A	I-93 ATLANTIC AVENUE	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
014B	I-93 CENTRAL ARTERY UTILITY RELOCATION	42,136	43,870	1.0	16.2	13.8	14.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
014C	I-93 CENTRAL ARTERY UTILITY RELOCATION	39,057	40,656	1.2	15.0	12.7	13.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14C2	Utility Relocations - Broad to North	27,094	28,982	0.0	0.0	15.0	15.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14C3	Relocation Of 30-Inch Gas Line	2,241	2,397	0.0	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
015A	I-93 CENTRAL ARTERY, NORTH TO CAUSEWAY	287,160	305,983	0.0	5.7	5.9	57.7	53.4	55.3	57.2	59.2	61.3	0.0	0.0
15A2	I-93 Central Artery, Chardon To Causeway	112,133	119,948	0.0	0.0	0.0	21.4	22.2	22.9	23.7	24.6	25.4	0.0	0.0
15A3	I-93 Central Artery, VB 4	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
015C	I-93 CENTRAL ARTERY SURFACE RESTORATIO	6,235	6,598	0.0	0.0	0.5	0.6	0.0	1.3	1.3	1.4	1.4	1.5	0.0
016A	PARCEL 7	2,560	2,560	0.0	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
017A	I-93 CENTRAL ARTERY, CONGRESS TO NORTH	201,974	214,616	5.1	5.1	5.3	40.2	35.9	37.1	38.4	39.7	41.1	0.0	0.0
17A2	I-93 Central Artery, Milk to North	157,183	168,139	0.0	0.0	0.0	36.0	37.3	38.6	39.9	41.3	0.0	0.0	0.0

CA/T Federal NON IC Funding

Package	Description	Est. Proj. Cost 10/91 $'s	Revised Total Cost	Spent Prior to SFY 1992	Projected Costs by State Fiscal Year -- Inflated Dollars									
					Jul-91 Jun-92	Jul-92 Jun-93	Jul-93 Jun-94	Jul-94 Jun-95	Jul-95 Jun-96	Jul-96 Jun-97	Jul-97 Jun-98	Jul-98 Jun-99	Jul-99 Jun-2000	Jun-2000 Jun-2001
17A3	I-93 Central Artery, VB'3	36,450	38,991	0.0	0.0	0.0	8.4	8.6	8.9	9.3	9.6	0.0	0.0	0.0
17A6	I-93 Central Artery, SB Congress to High	81,098	86,750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.5	36.8	38.1	0.0
017B	I-93 CENTRAL ARTERY, MBTA BLUE LINE CROS	21,046	22,348	0.0	0.0	0.0	10.7	11.1	0.0	0.0	0.0	0.0	0.0	0.0
018A/C	I-93 DEWEY SQUARE TUNNEL	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
018B	I-93 DEWEY SQUARE TRANSFORMERS	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
018C	I-93 SUMMER TO KNEELAND	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL CENTRAL ARTERY	1,016,366	1,081,839	7.3	44.5	55.8	217.8	168.4	164.1	169.9	211.3	166.0	39.5	0.0
CENTRAL ARTERY NORTH														
019A	I-93 CENTRAL ARTERY NORTH OF CAUSEWAY	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019B	I-93 VIADUCTS AND RAMPS NORTH OF CHARL	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019C	CHARLES RIVER BASIN RESTORATION	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019D	CHARLES RIVER BRIDGES AND VIADUCTS	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019E	SCIENCE PARK UNDERPINNING	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019F	CHARLES RIVER BASIN FERRY/WHARF	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019G	CHARLES RIVER AND TUNNELS N. OF RIVER	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019X	COSTS ASSOCIATED WITH SCHEME 8.1.D	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL CENTRAL ARTERY NORTH	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PROJECTWIDE														
	Management Consultant/Preliminary Engineering	68,810	68,810	17.2	17.2	17.2	17.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Management Consultant/Construction Support	73,153	73,153	0.0	3.1	6.0	12.3	12.9	10.0	10.0	10.3	7.2	1.4	0.0
	Geotechnical Services	6,486	6,486	2.6	1.3	1.3	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
020A	I-90 MECHANICAL/ELECTRICAL	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20A2	I-90 Electrical General Contractor	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
020B	I-93 MECHANICAL/ELECTRICAL	6,896	7,220	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.0
20B2	I-93 Electrical General Contractor	12,350	13,211	0.0	0.0	0.0	2.0	2.1	2.2	2.2	2.3	2.4	2.5	0.0
20C2	Tunnel Test Site Prep and Facility Mods	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20C8	Tunnel Test Fans, Instrumentation, Testing	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
021A	MATERIALS DISPOSAL SYSTEM	26,686	28,434	0.0	1.0	6.2	5.7	6.0	6.2	6.4	0.0	0.0	0.0	0.0
021B	MATERIALS PROCESSING SYSTEM	16,529	17,434	0.0	3.5	2.1	2.1	2.2	2.3	2.4	2.4	2.5	0.0	0.0
021C	SPECTACLE ISLAND SURFACE RESTORATION	1,142	1,204	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.6	0.6	0.0	0.0
022A	INTEGRATED PROJECT CONTROLS (IPCS)	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22A2	I-93 Furnish and Install IPCS	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22A3	Interim Control Center	741	741	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
009	Pest Control	627	627	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
025A	ASSESSMENT AND REMEDIATION	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	NET Interoffice Network Mods/Steam Plant Mods	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025C	PROJECT CONSERVATOR - 3RD WORK PROGR	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025D	PROJECT CONSERVATOR - 2ND WORK PROGR	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025E	PHASE III ARCHAEOLOGY - 1-93/I-90	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025F	HABS/HAER DOCUMENTATION	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025G	PHASE III ARCHAEOLOGY - MATERIALS DISPOS	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025H	PROJECT CONSERVATOR - 3RD WORK PROGR	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025S	PROJECTWIDE SAFETY CONSULTANT	1,031	1,031	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025T	PUBLIC INFORMATION CONTRACT	400	400	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL PROJECT WIDE	214,851	218,751	20.6	28.4	34.1	42.1	24.0	21.5	22.0	16.6	13.7	4.9	0.0
	Totals	1,491,759	1,574,401	28.4	115.2	125.9	292.5	246.8	230.3	238.0	275.8	179.7	44.4	0.0
	Cumulative Totals			28.4	143.6	269.5	562.0	808.8	1,039.1	1,277.2	1,552.9	1,732.7	1,777.1	1,777.1

CA/T State & Local Funding

Package	Description	Est. Proj. Cost 10/91 $'s	Revised Total Cost	Spent Prior to SFY 1992	Projected Costs by State Fiscal Year -- Inflated Dollars									
					Jul-91 Jun-92	Jul-92 Jun-93	Jul-93 Jun-94	Jul-94 Jun-95	Jul-95 Jun-96	Jul-96 Jun-97	Jul-97 Jun-98	Jul-98 Jun-99	Jul-99 Jun-2000	Jun-2000 Jun-2001
SOUTH BOSTON														
001A	I-90 SOUTH BOSTON INTERCHANGE	25,200	26,622	0.0	0.4	4.2	4.3	4.0	4.2	4.3	4.5	4.6	0.0	0.0
001B	VENT BUILDING 5 SUPERSTRUCTURE	1,915	2,040	0.0	0.0	0.1	0.1	0.0	0.7	0.8	0.8	0.0	0.0	0.0
002A	SOUTH BOSTON HAUL ROAD	4,134	4,256	0.2	2.8	0.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
004A	I-90 BMIP TUNNEL	3,216	3,229	0.6	2.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04A2	I-90 BMIP Tunnel and VB 6	17,978	19,231	0.0	4.8	5.0	5.2	5.3	0.0	0.0	0.0	0.0	0.0	0.0
024A	SERVICE/ADMINISTRATION COMPLEX	1,086	1,139	0.0	0.2	0.5	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0
25A1	Remediation - South Boston Haul Road	212	227	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL SOUTH BOSTON	53,741	56,743	0.8	10.9	10.5	10.4	9.7	4.9	5.1	5.3	4.6	0.0	0.0
EAST BOSTON / ITT														
005A	I-90 IMMERSED TUBE TUNNEL	20,614	22,015	0.1	7.5	7.4	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
005B	I-90 TUNNEL FINISHES	5,372	5,730	0.2	0.0	1.9	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
007A	I-90 BIRD ISLAND FLATS (BIF)	30,754	32,682	1.4	9.1	7.7	7.9	8.2	0.0	0.0	0.0	0.0	0.0	0.0
007B	I-90 PORTER STREET OUTFALL SEWERS	2,456	2,604	0.3	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
007C	I-90 EAST BOSTON TOLL PLAZA AND FACILITIE	1,402	1,491	0.0	0.1	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
007D	AIRPORT INTERCHANGE	3,142	3,278	0.0	0.1	1.7	0.9	0.8	0.0	0.0	0.0	0.0	0.0	0.0
07D2	Airport Interchange	3,797	4,062	0.0	0.0	0.0	0.0	2.3	2.3	0.0	0.0	0.0	0.0	0.0
008A	EAST BOSTON AIRPORT/ROUTE 1A INTERCHAN	30,283	31,755	0.0	8.0	0.4	0.4	6.7	6.5	6.7	6.9	0.0	0.0	0.0
05A2	Building Demolition, South Boston	183	196	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07A3	Demolition of Logan Airport Buildings	216	231	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL EAST BOSTON/ITT	98,220	104,044	2.2	26.2	20.9	19.3	20.5	8.8	6.7	6.9	0.0	0.0	0.0
SOUTH BAY														
009A	SOUTH BAY NB TUNNEL, WEST SHORE	38,298	40,569	0.0	4.1	0.8	7.1	6.4	6.7	6.9	7.1	7.4	0.0	0.0
09A2	Demolish Rapid Service Press Building	164	176	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
009B	SOUTH BAY FORT POINT CHANNEL CROSSING	21,102	22,392	0.0	0.0	0.6	5.7	3.7	3.8	3.9	4.1	4.2	0.0	0.0
009C	SOUTH BAY, RANDOLPH TO KNEELAND STREET	18,126	19,255	0.0	0.0	0.6	0.8	4.5	4.0	4.1	4.3	4.4	0.0	0.0
009D	SOUTH BAY INTERSECTION RESTORATION	2,127	2,267	0.0	0.0	0.0	0.1	0.1	0.0	0.0	1.3	1.4	0.0	0.0
009E	FORT POINT CHANNEL RESTORATION	478	502	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.0	0.0
09F1	SSTC Ramps	1,000	1,000	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
010A	I-93 SOUTH BAY TEMPORARY BRIDGE UNDERP	4,041	4,269	0.0	0.8	0.0	0.6	0.6	0.7	0.7	0.7	0.7	0.0	0.0
012A	I-93 MASS AVENUE INTERCHANGE	22,945	24,276	0.0	0.0	3.4	4.9	4.5	4.7	4.9	5.0	0.0	0.0	0.0
013A	SOUTH BOSTON BYPASS ROAD	8,725	9,143	0.0	0.4	4.7	2.3	2.4	0.0	0.0	0.0	0.0	0.0	0.0
014A	NEW EASTSIDE INTERCEPT RELOCATION	2,756	2,925	0.2	0.1	1.3	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL SOUTH BAY	119,762	126,774	0.2	5.3	12.2	23.6	22.2	19.8	20.5	22.7	18.3	0.0	0.0
CENTRAL ARTERY														
011A	I-93 ATLANTIC AVENUE	21,101	22,455	0.0	0.6	1.1	5.6	5.8	6.0	6.2	0.0	0.0	0.0	0.0
014B	I-93 CENTRAL ARTERY UTILITY RELOCATION	10,534	10,967	0.3	4.1	3.4	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
014C	I-93 CENTRAL ARTERY UTILITY RELOCATION	11,066	11,519	0.3	4.2	3.6	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14C2	Utility Relocations - Broad to North	7,677	8,212	0.0	0.0	4.2	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14C3	Relocation Of 30-Inch Gas Line	635	679	0.0	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
015A	I-93 CENTRAL ARTERY, NORTH TO CAUSEWAY	71,790	76,496	0.0	1.4	1.5	14.4	13.3	13.8	14.3	14.8	15.3	0.0	0.0
15A2	I-93 Central Artery, Chardon To Causeway	28,033	29,987	0.0	0.0	0.0	5.4	5.5	5.7	5.9	6.1	6.4	0.0	0.0
15A3	I-93 Central Artery, VB 4	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
015C	I-93 CENTRAL ARTERY SURFACE RESTORATIO	2,210	2,346	0.0	0.0	0.1	0.1	0.0	0.5	0.5	0.5	0.5	0.6	0.0
016A	PARCEL 7	640	640	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
017A	I-93 CENTRAL ARTERY, CONGRESS TO NORTH	50,494	53,654	1.3	1.3	1.3	10.0	9.0	9.3	9.6	9.9	10.3	0.0	0.0
17A2	I-93 Central Artery, Milk to North	39,296	42,035	0.0	0.0	0.0	9.0	9.3	9.6	10.0	10.3	0.0	0.0	0.0

CA/T State & Local Funding

Package	Description	Est. Proj. Cost 10/91 $'s	Revised Total Cost	Spent Prior to SFY 1992	Projected Costs by State Fiscal Year -- Inflated Dollars									
					Jul-91 Jun-92	Jul-92 Jun-93	Jul-93 Jun-94	Jul-94 Jun-95	Jul-95 Jun-96	Jul-96 Jun-97	Jul-97 Jun-98	Jul-98 Jun-99	Jul-99 Jun-2000	Jun-2000 Jun-2001
17A3	I-93 Central Artery, VB 3	9,113	9,748	0.0	0.0	0.0	2.1	2.2	2.2	2.3	2.4	0.0	0.0	0.0
17A6	I-93 Central Artery, SB Congress to High	20,274	21,688	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.9	9.2	9.5	0.0
017B	I-93 CENTRAL ARTERY, MBTA BLUE LINE CROS	5,261	5,587	0.0	0.0	0.0	2.7	2.8	0.0	0.0	0.0	0.0	0.0	0.0
018A/C	I-93 DEWEY SQUARE TUNNEL	5,729	6,109	0.0	0.0	0.1	0.1	0.1	0.0	0.0	2.4	2.5	2.6	0.0
018B	I-93 DEWEY SQUARE TRANSFORMERS	41	43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
018C	I-93 SUMMER TO KNEELAND	3,546	3,783	0.0	0.0	0.1	0.1	0.1	0.0	0.0	1.5	1.5	1.6	0.0
	SUBTOTAL CENTRAL ARTERY	287,439	305,948	1.9	12.3	16.2	61.1	48.0	47.2	48.8	56.9	45.7	14.2	0.0
CENTRAL ARTERY NORTH														
019A	I-93 CENTRAL ARTERY NORTH OF CAUSEWAY	8,985	9,420	0.0	0.2	2.6	3.6	3.7	0.0	0.0	0.0	0.0	0.0	0.0
019B	I-93 VIADUCTS AND RAMPS NORTH OF CHARL	33,646	35,841	0.0	0.0	1.1	1.2	9.3	9.7	10.0	10.4	0.0	0.0	0.0
019C	CHARLES RIVER BASIN RESTORATION	4	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019D	CHARLES RIVER BRIDGES AND VIADUCTS	11	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019E	SCIENCE PARK UNDERPINNING	24	24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019F	CHARLES RIVER BASIN FERRY/WHARF	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019G	CHARLES RIVER AND TUNNELS N. OF RIVER	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
019X	COSTS ASSOCIATED WITH SCHEME 8.1.D	340,000	363,698	0.0	0.0	0.0	55.7	57.6	59.6	61.7	63.9	66.1	68.4	0.0
	SUBTOTAL CENTRAL ARTERY NORTH	382,671	408,999	0.0	0.2	3.7	60.4	70.6	69.3	71.7	74.2	66.1	68.4	0.0
PROJECTWIDE														
	Management Consultant/Preliminary Engineering	31,948	31,948	8.0	8.0	8.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Management Consultant/Construction Support	33,964	33,964	0.0	1.4	2.8	5.7	6.0	4.7	4.7	4.8	3.3	0.7	0.0
	Geotechnical Services	2,432	2,432	1.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
020A	I-90 MECHANICAL/ELECTRICAL	1,663	1,743	0.3	0.3	0.4	0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0
20A2	I-90 Electrical General Contractor	2,408	2,576	0.0	0.0	0.9	0.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0
020B	I-93 MECHANICAL/ELECTRICAL	4,366	4,569	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.0
20B2	I-93 Electrical General Contractor	7,719	8,257	0.0	0.0	0.0	1.3	1.3	1.4	1.4	1.4	1.5	1.6	0.0
20C2	Tunnel Test Site Prep and Facility Mods	1,327	1,419	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20C8	Tunnel Test Fans, Instrumentation, Testing	1,327	1,419	0.0	0.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
021A	MATERIALS DISPOSAL SYSTEM	16,679	17,772	0.0	0.6	3.9	3.6	3.7	3.8	4.0	0.0	0.0	0.0	0.0
021B	MATERIALS PROCESSING SYSTEM	10,331	10,896	0.0	2.2	1.3	1.3	1.4	1.4	1.5	1.5	1.6	0.0	0.0
021C	SPECTACLE ISLAND SURFACE RESTORATION	713	753	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.4	0.4	0.0	0.0
022A	INTEGRATED PROJECT CONTROLS (IPCS)	6,989	7,386	0.3	0.3	2.4	2.5	2.3	0.0	0.0	0.0	0.0	0.0	0.0
22A2	I-93 Furnish and Install IPCS	3,574	3,823	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.0
22A3	Interim Control Center	278	278	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
00B	Pest Control	392	392	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
025A	ASSESSMENT AND REMEDIATION	678	678	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	NET Interoffice Network Mods/Steam Plant Mods	3,516	3,516	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025C	PROJECT CONSERVATOR - 3RD WORK PROGR	4	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025D	PROJECT CONSERVATOR - 2ND WORK PROGR	109	109	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025E	PHASE III ARCHAEOLOGY - 1-93/I-90	194	194	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025F	HABS/HAER DOCUMENTATION	100	100	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
025G	PHASE III ARCHAEOLOGY - MATERIALS DISPOS	11	11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025H	PROJECT CONSERVATOR - 3RD WORK PROGR	105	105	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
025S	PROJECTWIDE SAFETY CONSULTANT	645	645	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
025T	PUBLIC INFORMATION CONTRACT	250	250	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SUBTOTAL PROJECT WIDE	131,721	135,238	11.6	19.9	21.7	25.7	17.3	12.5	12.8	9.4	8.1	3.5	0.0
	Totals	1,073,554	1,137,745	16.5	74.9	85.2	200.6	188.3	162.4	165.5	175.4	142.9	86.2	0.0
	Cumulative Totals			16.5	91.4	176.6	377.2	565.5	727.9	893.5	1,068.9	1,211.8	1,298.0	1,298.0

Assumptions File

Complete Printout

EOTC Financial Model
Assumptions Worksheet

Inflation

Inflation Flag 1 (0=off,1=on)

	Historical Years				Base Year	Projected Years																		
1992 Base Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Capital																									
Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Factor	0.87	0.90	0.93	0.97	1.00	1.04	1.07	1.11	1.15	1.19	1.23	1.27	1.32	1.36	1.41	1.46	1.51	1.56	1.62	1.68	1.73	1.79	1.86	1.92	1.99
Operating																									
Rate	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Factor	0.87	0.90	0.93	0.97	1.00	1.04	1.07	1.11	1.15	1.19	1.23	1.27	1.32	1.36	1.41	1.46	1.51	1.56	1.62	1.68	1.73	1.79	1.86	1.92	1.99

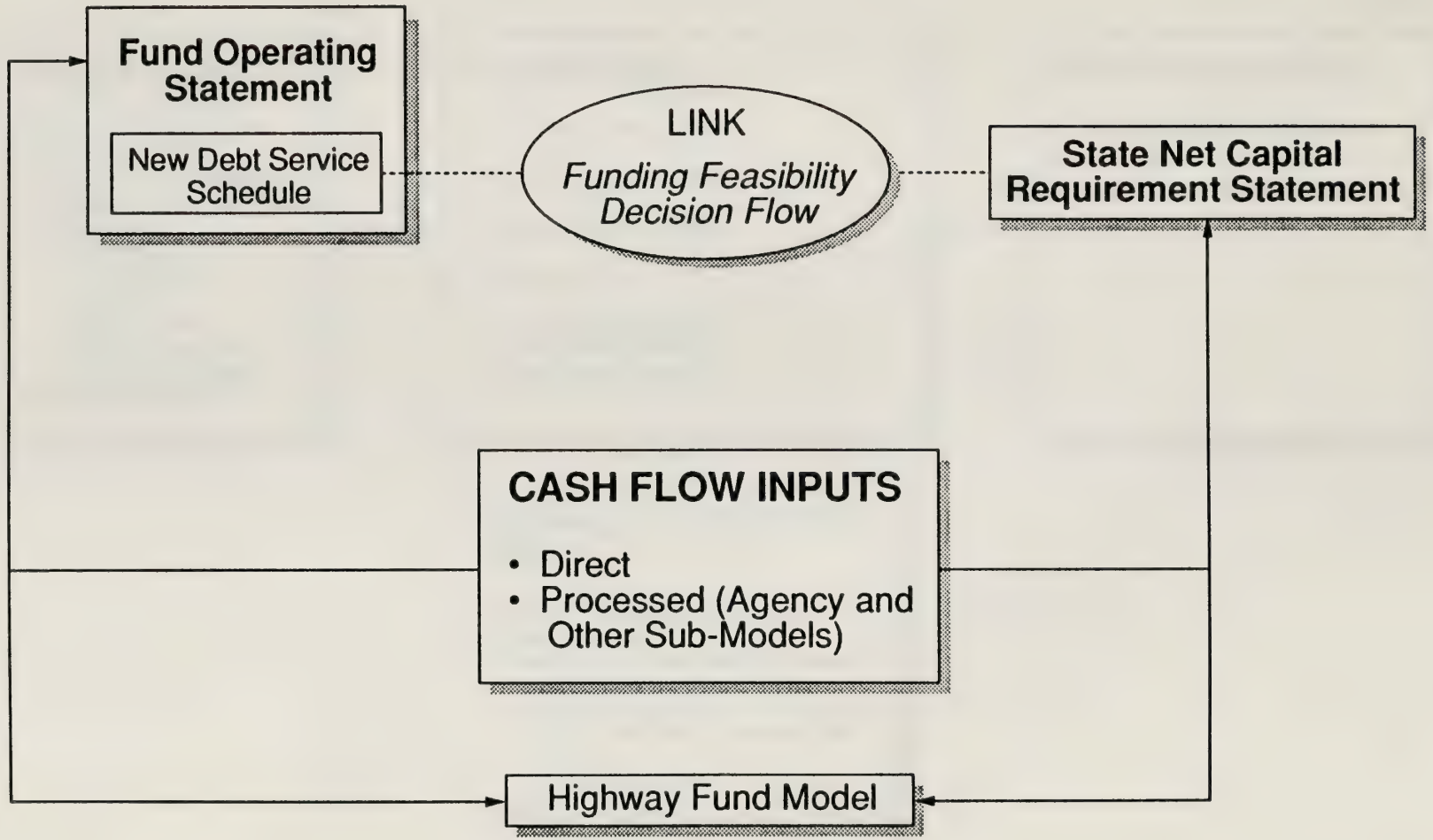
Commonwealth of Massachusetts, Executive Office of Transportation and Construction

Summary Level Financial Planning and Analysis Module

Documentation and User Training Package

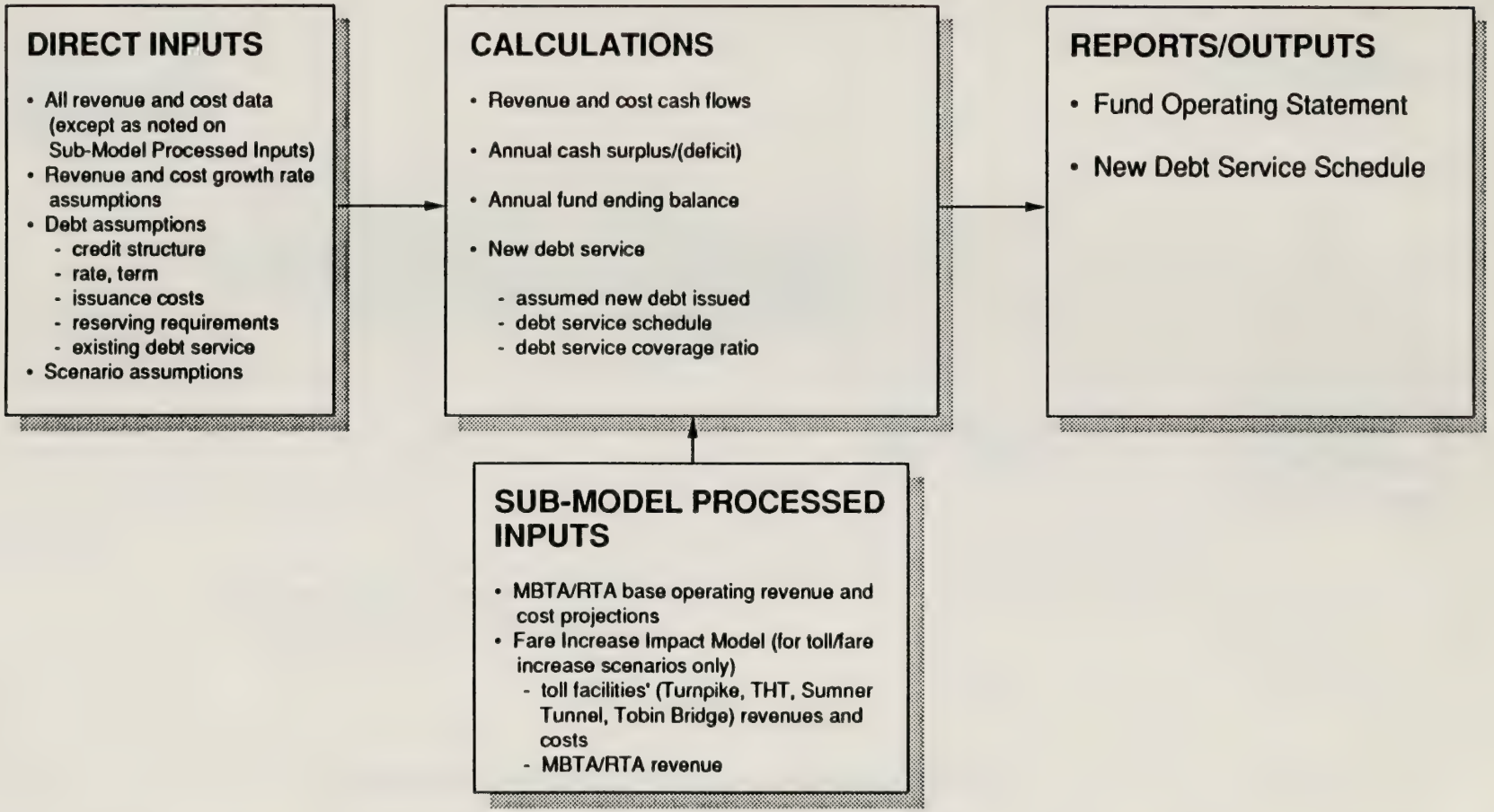
Deloitte & Touche

Operational Overview of Summary Module

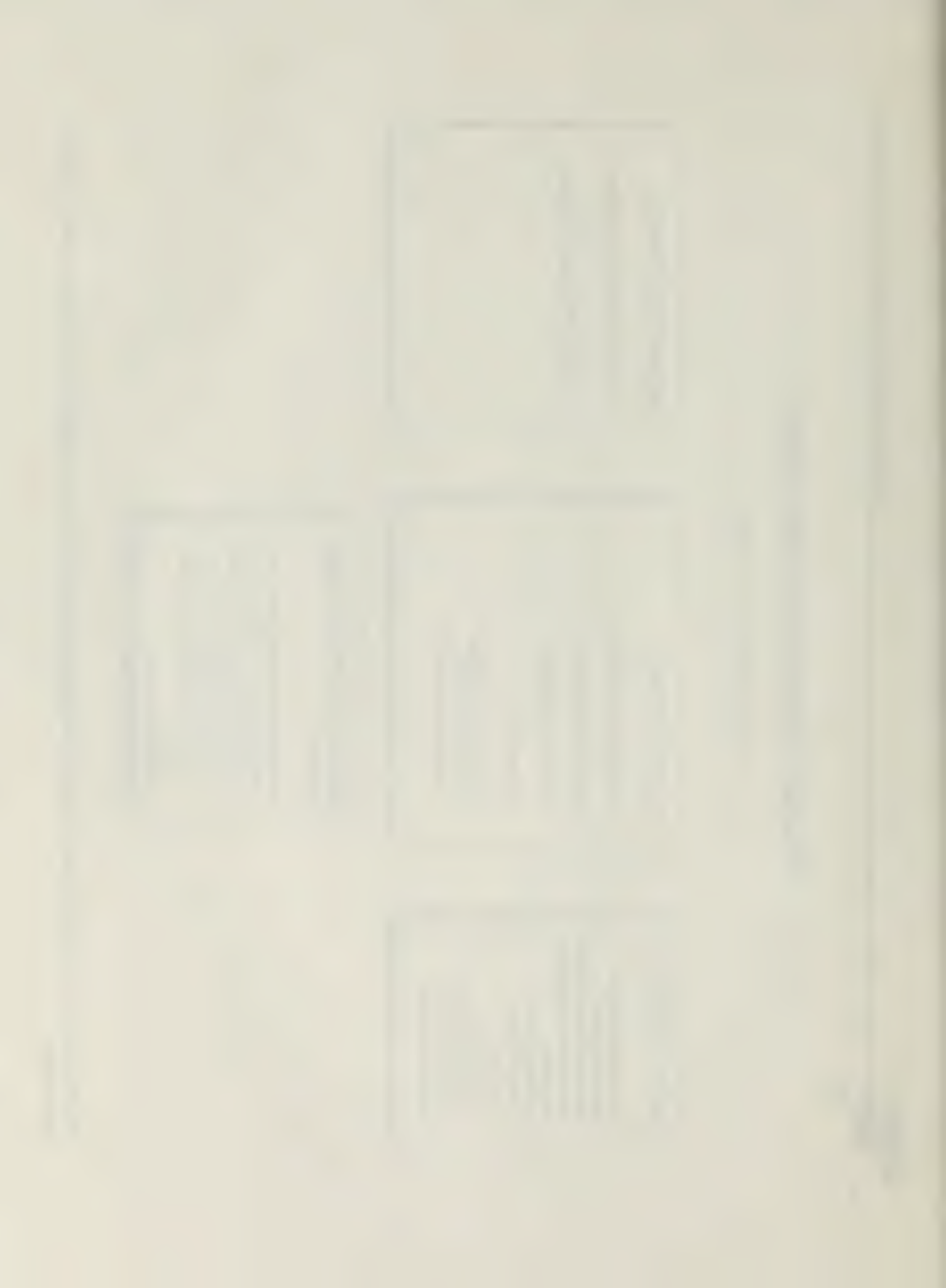


Fund Operating Statement

Functional View

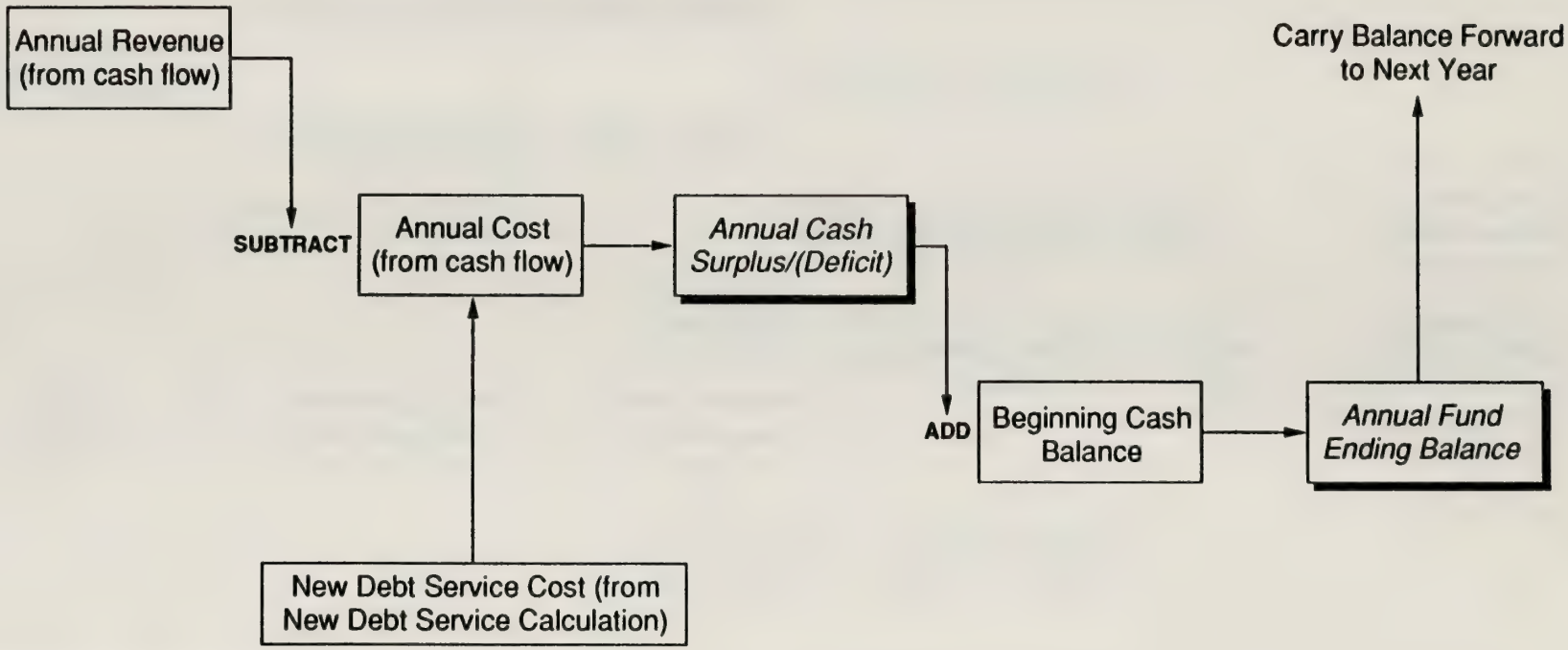


- Revenue and cost cash flow calculations are simple straight-line projections from a base SFY 1993 number, using a constant growth rate.



Fund Operating Statement

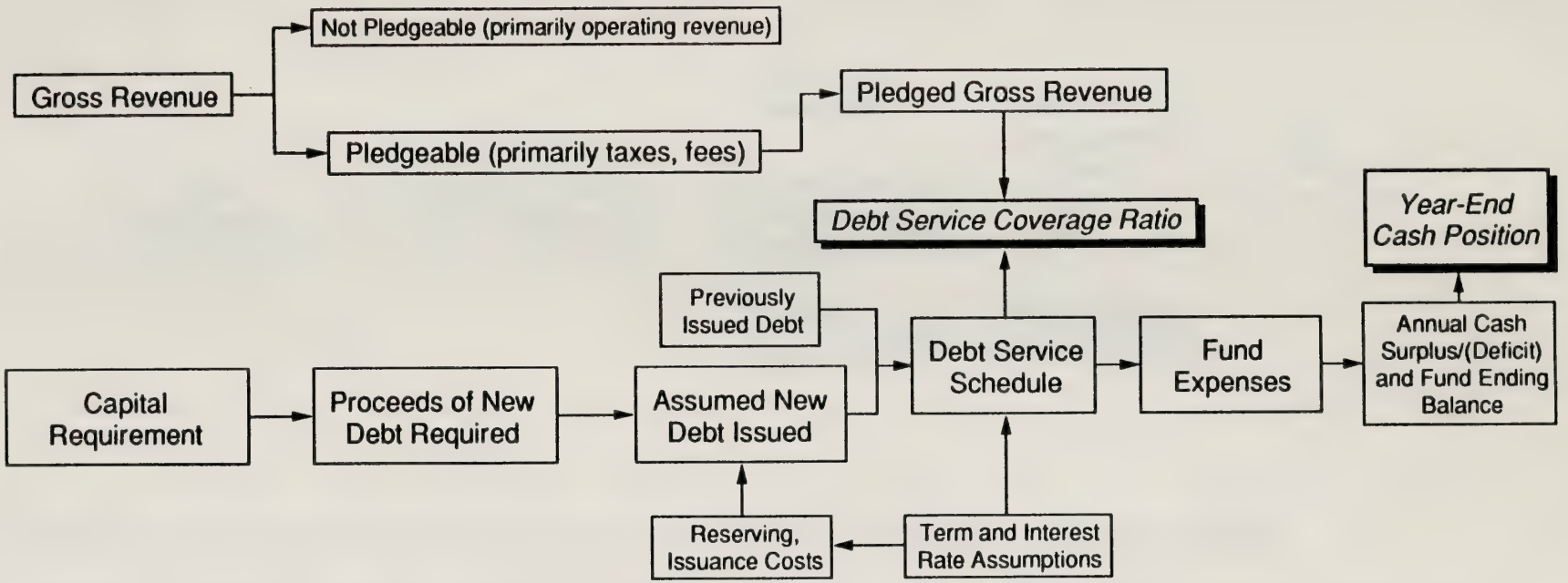
Annual Cash Surplus/(Deficit) and Annual Fund Ending Balance Calculations



- Revenue and Cost cash flow inputs can be scenario-driven
- New Debt Service Calculation is discussed on the following page

Fund Operating Statement

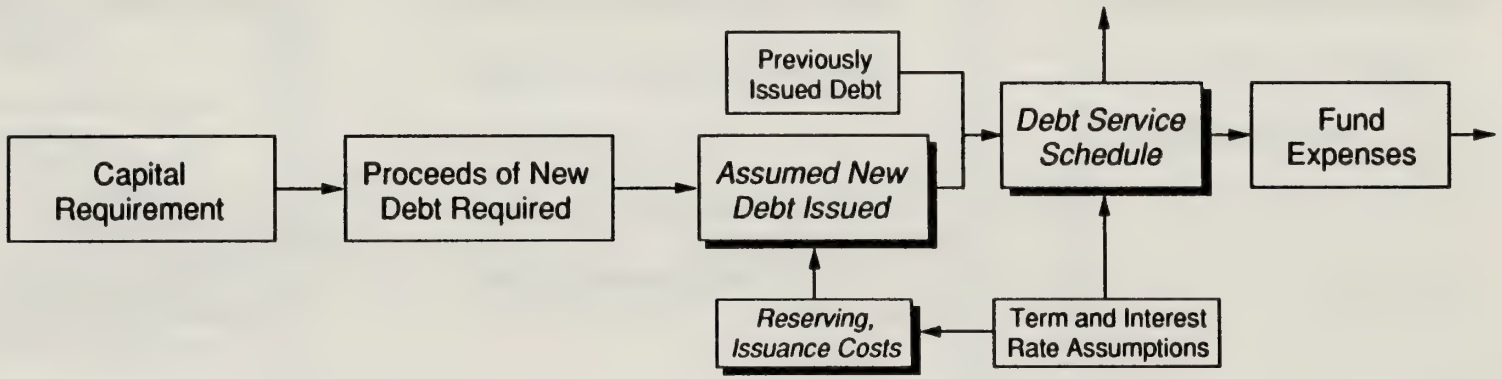
New Debt Service Calculation



- Debt Service Coverage Ratio is Pledged Gross Revenue (for the year) divided by Total Debt Service (after issuance of new debt) -- a minimum Coverage Ratio will be prescribed in bond covenants
- Year-End Cash Position is a subjective judgement based on current and projected Surplus/(Deficits) and Fund Ending Balances (before issuance of debt beyond the current year) -- with each new issue, it must be demonstrated to investors that the Fund has the financial capacity to support the added debt burden into the future

Fund Operating Statement

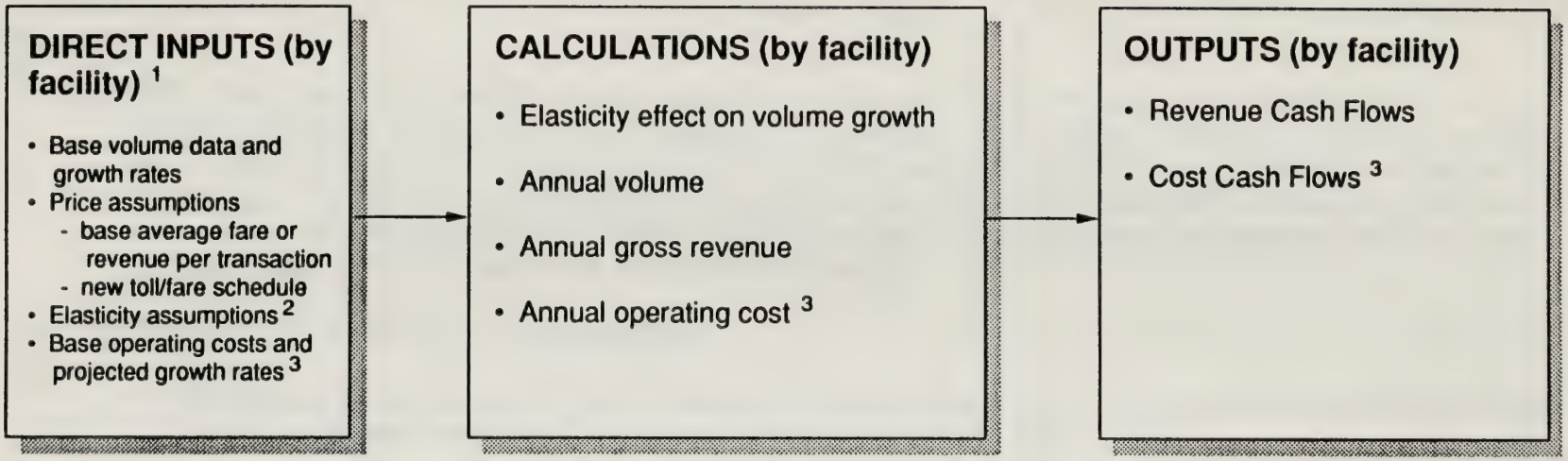
New Debt Service Sub-Calculations



- Issuance costs are assumed to be 1% of a principal amount equal to the Proceeds of New Debt Required
- Reserving requirement is assumed to be one payment (given level debt service and the term and rate assumptions) on a principal amount equal to the Proceeds of New Debt Required
- Assumed New Debt Issued = Proceeds + Reserve + Issuance Costs
- The Debt Service Schedule for the new debt issue is calculated on a principal amount equal to the Assumed New Debt Issued (given level debt service and the term and rate assumptions)

Fund Operating Statement

Fare Increase Impact Sub-Model



- Elasticity effect on volume growth = (this year's toll or fare / last year's toll or fare) * elasticity factor *(expressed as a negative percentage)*
- Annual volume = previous year's volume * ((base volume growth rate - elasticity effect on volume growth) + 1)
- Annual gross revenue = annual volume * average fare or revenue per transaction
- Annual operating cost = previous year's operating cost * (growth rate assumption + 1)
- The Fare Increase Impact Model is linked to Fund Operating Statement Scenarios 2, 4, 5, 7, 9, and 11

1. Base data sources (by facility):
   - Turnpike and Sumner Tunnel: Lazard Freres Metro Highway System report, Massachusetts Turnpike Authority annual reports
   - Third Harbor Tunnel: Lazard Freres report
   - Tobin Bridge: Massacusetts Port Authority annual reports
   - MBTA/RTAs: agency modules of the Financial Planning and Analysis Model
2. Base elasticity assumptions from Lazard Freres report and DeLeuw Cather (see Revenue section of Lazard Freres report for a more detailed discussion)
   - Base Turnpike and Tunnel elasticity assumption is -8% (for every 100% increase in toll/fare, there is a corresponding 8% *decrease* in volume)
   - Tobin Bridge elasticity assumption is -15%, MBTA/RTA elasticity assumption is 0%
3. MBTA, RTA, and Turnpike operating costs are not represented in this sub-model.

Fund Operating Statement

MITA Base Case Revenue, Cost, and Debt Service Direct Inputs

NOTE: The Summary Module Fund Operating Statement was originally conceived as a tool to perform financial analysis of the original MITA concept. The direct inputs incorporated in the MITA Base Case later became the basis for analysis of the MITTF and "Surgical Approach" concepts. The reader should understand that the direct inputs listed below constitute the Base Case only; scenario assumptions can cause line items to change or be removed entirely (see Scenario Assumptions pages for detailed discussion).

1. Income - Taxes and Assessments:

a. *Beginning Cash Balance* - $58 million is projected to remain in the current Highway Fund from consolidated transfers at the end of state fiscal year (SFY) 1992.

b. *Motor Fuel Tax* - This tax is estimated at $540 million in FY 1993 by the State and is projected to grow at approximately 1% annually. This represents 100% of the tax. Currently, approximately 98% of the tax is dedicated to the Highway Fund.

c. *Cigarette Tax* - The portion of the tax, $25 million, currently dedicated to the Highway Fund is included. House 1 SFY 1993 sweeps this into the General Fund. Growth is projected to be flat.

d. *Registry Fees* - These fees are estimated at $411 million in House 1 SFY 1993 and projected to grow at 5% annually. Assumes impact of two year registrations for commercial vehicles will reduce 1995 and 1997, 1998 and 2001 fees by $24 million in each year.

Fund Operating Statement

MITA Base Case Revenue, Cost, and Debt Service Direct Inputs

(Continued)

e. *Other Highway Fund Revenues* - These revenues consist of $11 million from departmental and other non-tax revenues and $4.5 million in Federal reimbursements. These items are identified in House 1 SFY 1993, dedicated to the Highway Fund, and are projected to grow at 5% per year. The $42 million "MITA benefit" included in House 1 is excluded.

f. *Local Assessments* - These assessments are estimated at $134 million in SFY 1993 and projected to grow at 2.5% per year. It includes local assessments for MBTA and RTA's Net Cost of Service at existing levels.

2. Income - Operating Revenues:

a. *Tolls* - These tolls include estimated Third Harbor Tunnel and Tobin Bridge net toll revenues. Tobin Bridge net in SFY 1993 is expected to be at the breakeven level. A projected toll increase from 50 cents to $1.00 in FY 1994 is expected to result in a $6 million positive net revenue. Third Harbor Tunnel net revenue, based on the Lazard Freres report, is expected to be $(2) million initially growing to $1.5 million by 1998.

b. *Transit Operations* - Growth of 4.6% p.a. is based on projected increases in ridership and other operating revenue. No assumption regarding general fare increases is incorporated.

c. *Federal Operating Assistance* - This assistance includes SFY 1993 anticipated federal assistance for MBTA and RTA's operating expenses, constant through plan period.

Fund Operating Statement

MITA Base Case Revenue, Cost, and Debt Service Direct Inputs

(Continued)

d. *Turnpike Revenue* - This includes an estimate of FY 1993 Turnpike toll and other revenue, assuming 5% p.a. growth through plan period assuming traffic growth only.

e. *MassPort* - This is an estimated "surplus" of SFY 1993 net revenues, growing at 5% per annum. Assumed changes to MassPort operating situation are revenues increased by an estimated $25 million annually for Passenger Facility Charges implementation and elimination of the Tobin Bridge net revenue.

f. *State General Fund* - Assumes General Fund will match local assessments on cities and towns for annual Net Cost of Service of MBTA and RTA's.

g. *Interest Income* - This is assumed to be interest income on the average available fund cash balance. Assumes an even spending pattern throughout the year and 5 percent interest rate.

3. Expense - Administration:

a. *MITA* -.Assumes $5 million administration cost of MITA to perform certain consolidated administrative, finance planning and other functions.

Fund Operating Statement

MITA Base Case Revenue, Cost, and Debt Service Direct Inputs

(Continued)

4. Expense - Operations:

a. *Transit* - Includes SFY 1993 estimated operating costs for MBTA and RTA's growing at a projected 5.4% per year, based on the average historical growth rate between 1986 and 1992.

b. *Highway* - Assumes MHD, MAC and EOTC operating costs plus Turnpike operating costs projected at $75 million. Costs are projected to grow at 7% per annum. Includes assumption that turnpike returns all net revenue to Trust Fund, which, in turn, finances Turnpike capital program.

c. *Registry* - Estimated House 1 SFY 1993 Registry operating costs, projected to grow at 5% per annum.

d. *State Police* - Estimated House 1 SFY 1993 operating costs, projected to grow at 5% per annum.

e. *Operating Efficiencies* - These assume implementation of management initiatives identified in the 1990 Morgan Stanley report to save approximately $30 million, plus an incremental $25 million in additional savings through efficiencies gained through consolidation.

f. *Pension and Other* - Assumes current FY 1993 costs for fringe benefits, costs for collection of gas tax, MVMB reserve, and costs to Consumer Affairs.

Fund Operating Statement

MITA Base Case Revenue, Cost, and Debt Service Direct Inputs

(Continued)

g. *Local Aid* - This assumes that the current 7.5% contribution of gas tax to local authorities for operating assistance continues. The additional 7.5% available to be bonded for local capital assistance is assumed to be incorporated in the refunded debt service or incremental available bonding capacity.

5. Debt Service and New Debt Issuance:

a. *MBTA Refundings* - $190 million p.a. debt service assumed to refund approximately $1.7 billion existing long term debt (excluding $58 million non-refundable 1986 Series A Refunding Bonds). Bonds are assumed to be tax exempt, 30 year maturities, level debt service MITA bonds bearing 7.3% simple interest. Ratings on bonds, given revenue based security, is assumed to be "A" credit. Cash flow shown incorporates assumptions regarding costs of issuance and reserve requirements. Does not include $80 million p.a. debt service required to refund approximately $760 million of short term State and MBTA obligations to "forward fund" MBTA.

b. *MHD Refundings* - $130 million p.a. debt service assumed to refund approximately $1.4 billion (principal amount) of existing Highway obligations incorporated in State of Massachusetts general obligation debt. Other assumptions regarding bonds same as 6.a.

Fund Operating Statement

MITA Base Case Revenue, Cost, and Debt Service Direct Inputs

(Continued)

c. *MassPike Refundings* - $37 million p.a. debt service assumed to refund approximately $200 million of existing debt. An uneconomic refunding necessary to eliminate Turnpike Trust Agreement. Other assumptions regarding bonds same as in 6.a.

d. *New Debt Issues* - New debt was assumed to be issued secured by certain Trust revenues not generated by operating entities. Assumes bond covenants will require a minimum coverage of 2.5 times "adjusted" gross revenue to total debt service and a minimum ending cash balance of at least $100 million. New debt was assumed issued in $600 million annual increments (mirroring the combined Highway and Transit caps) until these conditions are exceeded.

6. General:

a. Model assumes that MITA structure, trust and refundings are all implemented by start of state fiscal year 1993. Delays in implementing the structure will impact the results shown.

b. Inflation is incorporated into all assumed growth rates. The assumed inflation rate is 3.5% per annum.

Fund Operating Statement

Scenario Assumptions

Base Case (Variant 1)

- Local Assessments and General Fund match each reduced by $20 million in the first year (1993)

(1) Constrained Operating Costs

- Highway and Transit operating costs constrained to 4% annual growth
- Public Safety costs out of MITA

(2) Fare Increases

- Sumner Tunnel toll goes to $1.30 in 1993; $1.70 in 1995; $2.70 in 1998; $2.80 in 2000
- Third Harbor Tunnel starts at $1.70 in 1995; $2.70 in 1998; $2.80 in 2000
- Tobin Bridge goes to $1.30 in 1993; $1.70 in 1995
- Average Turnpike toll goes to $1.50 in 1993; $1.70 in 1995; $2.00 in 2000
- Average MBTA fare goes to $1.00 in 1994; $1.25 in 1996

(3) General Fund Elimination

- State General Fund match is replaced by Motor Vehicle Sales Tax

(4) Optimistic

- All assumptions from Scenarios 1, 2, and 3 in effect

(5) Optimistic Revenue Only

- All assumptions from Scenarios 2 and 3 in effect

Fund Operating Statement

Scenario Assumptions (Continued)

(6) MITTF Base Case

- All assumptions from MITA Base Case in effect, except as described below
- THT/Tobin Bridge net operating revenue, Turnpike revenue, and MassPort "surplus" removed from revenue
- Turnpike, Public Safety, and Operating Efficiencies removed from operating expenses
- Debt refunding restricted to "forward funding" the MBTA -- service of all long term debt is assumed by the Commonwealth

(7) MITTF All Revenue

- Same as Scenario 6, except as described below
- Cigarette tax removed from revenue
- Registry fees grow at 7% per annum
- Congestion pricing contributes $100 million in net revenue starting in 1995; grows at inflation rate thererafter
- Transit fares are raised as described in Scenario 2
- MITTF operates the Boston Extension and Callahan/Sumner Tunnels
  - Turnpike tolls are raised as described in Scenario 2
  - It is assumed that 38.47% of total Turnpike revenue can be attributed to the Extension and Tunnels (based on Lazard Freres analysis of Turnpike operations by road segment)
  - Base year (SFY 1993) Extension and Tunnels operating cost is assumed to be $25 million; annual growth rate is 7%
- Motor Vehicle Sales Tax substituted for General Fund match

(8) MITTF Base Revenue

- Same as Scenario 7, except that Registry Fee Increases and Congestion Pricing do not occur

Fund Operating Statement

Scenario Assumptions (Continued)

(9) MITTF Aggressive Toll Increases

- Same as Scenario 7, except as described below
- Congestion Pricing Does not occur
- Turnpike toll increases are greater than those assumed in Scenario 2; a "best guess" revenue projection is incorporated in the scenario

(10) MITTF Regsitry Increases Only

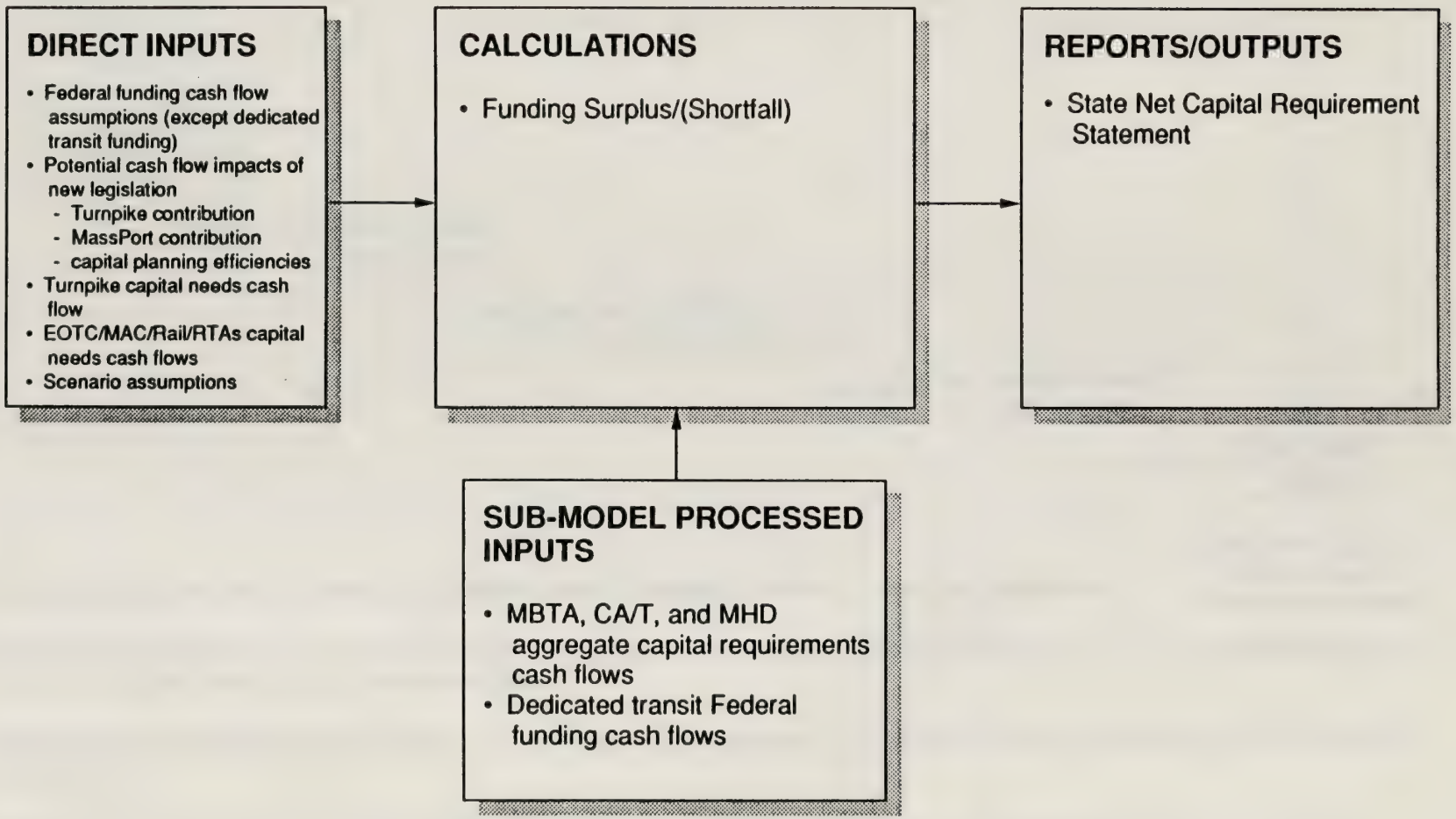
- Same as Scenario 7, except that Congestion Pricing does not occur

(11) MITTF All Revenue (Varied Debt)

- Same as Scenario 7, except as described below
- Registry and toll revenues are split out into two separate sub-funds, leaving all other revenue and expense in an operating sub-fund
  - Each sub-fund issues its own "flavor" of debt, based on the growth characteristics of
    - the revenue included
    - the operating expenses included
  - It is assumed that registry and toll revenue debt will secure superior credit ratings, with concomitantly low debt service coverage requirements

State Net Capital Requirement Statement

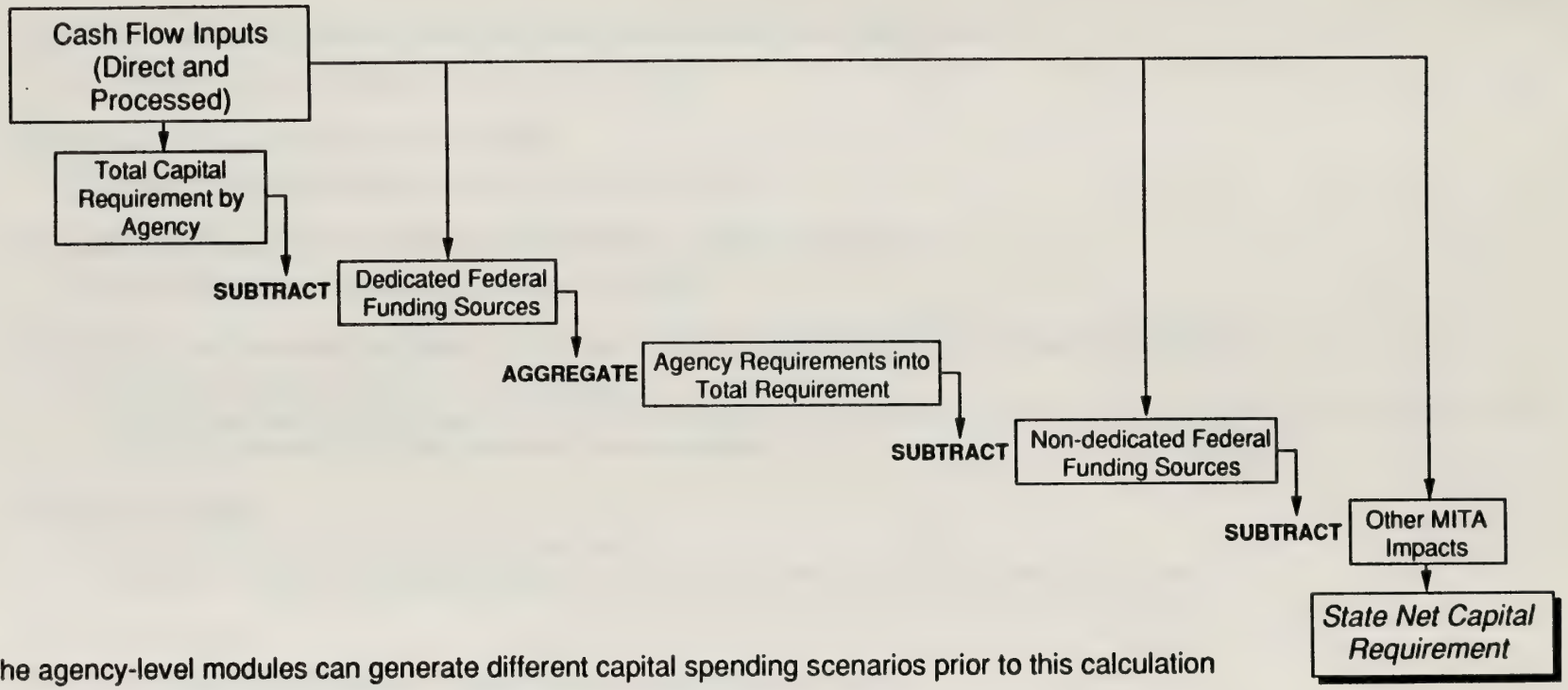
Functional View





State Net Capital Requirement Statement

Funding Surplus/(Shortfall) Calculation



- The agency-level modules can generate different capital spending scenarios prior to this calculation
- Though this method does not specifically address the issue of Non-dedicated Federal Funds (i.e., Non-IC Funds)allocation, the model can allocate these funds at the agency level
- Federal funding assumptions are a critical *qualitative* piece of this analysis -- the model does not automatically project Federal funding levels
- At present, the CA/T project cash flow is a direct input based on data from the project management group -- the cash flow generated by the CA/T module of this model is *not currently being used* in the Summary module analysis

State Net Capital Requirement Statement

Federal Funding Assumptions (SFY 1993 - SFY 2002)

Pre-ISTEA Interstate Completion (IC) funds (Obligated for Central Artery/Tunnel, not yet spent)

- $340 million total ($250 million in 1993, $90 million in 1994)

Pre-ISTEA IC funds (Restored Obligation Authority)

- $150 million total ($30 million per year from 1993 through 1997)

Pre-ISTEA Non-IC funds (Including funds available for the Bridge program, not yet spent)

- $150 million total ($100 million in 1993, $50 million in 1994)

Intermodal Surface Transportation Efficiency Act (ISTEA, 1992 Transportation Bill), Interstate Completion (IC) Funds

- $2,300 million total (90% of $2,550 million authorized)
  - cash flow was estimated by calculating this amount as a percentage of total CA/T project cost during the period 1993 through 1997, then multiplying the project cash flow for the period by the percentage

ISTEA (Non-IC Funds)

- $2,010 million total (90% of $2,200 million authorized)
  - $480 million in 1993, $400 million in 1994, $350 million in 1995, $380 million in 1996, $400 million in 1997

Post-ISTEA (IC Funds)

- $855 million total ($487 million in 1998, $288 million in 1999, $80 million in 2000)

Post-ISTEA (Non-IC Funds)

- $1,670 million total ($334 million per year during the period 1998 through 2002)

Dedicated Transit Funds (Sections 3, 9, and 23)

- From MBTA model; see model output for cash flow; total amount for the ten-year period is $1,160 million

State Net Capital Requirement Statement

Federal Funding Assumptions by Program (SFY 93 - SFY 92)

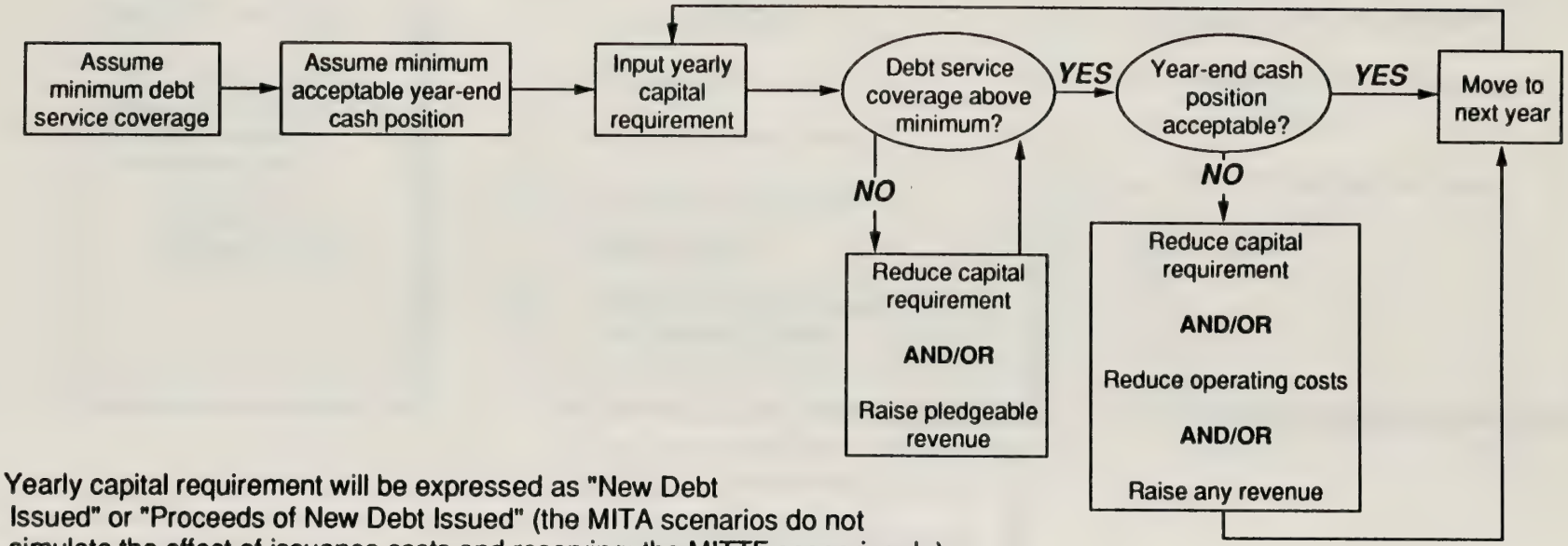
Nominal Dollars (Billions)

FEDERAL PROGRAM	Pre - ISTEA AMOUNT	ISTEA AMOUNT	Post - ISTEA AMOUNT	ESTIMATED FUNGIBILITY [1]
Interstate Completion (IC)	$0.34	$2.30	$0.86	0%
Interstate Maintenance	-	0.20	0.22	50%
Non-IC	0.10	-	-	0%
Bridge	0.05	0.82	0.88	50%
National Highway System (NHS)	-	0.14	0.15	100%
Surface Transportation Program (STP)	-	0.16	0.18	100%
Congestion Mitigation and Air Quality (CMAQ)	-	0.22	0.24	100%
Toll Road Reimbursement	-	0.19	-	100%
Hold Harmless	-	0.28	-	100%
SUBTOTAL Non-IC Funds	*0.15*	*2.01*	*1.67*	
Restored Obligation Authority (Pre-ISTEA IC Funds)	0.15	-	-	0%
Dedicated Transit	0.20	0.68	0.28	0%
TOTAL	$0.84	$4.99	$2.81	

1. Estimated Fungibility refers to transferability of Federal funds from the programs to the CA/THT and/or to Transit.

Linking State Net Capital Requirements to the Fund Operating Statement

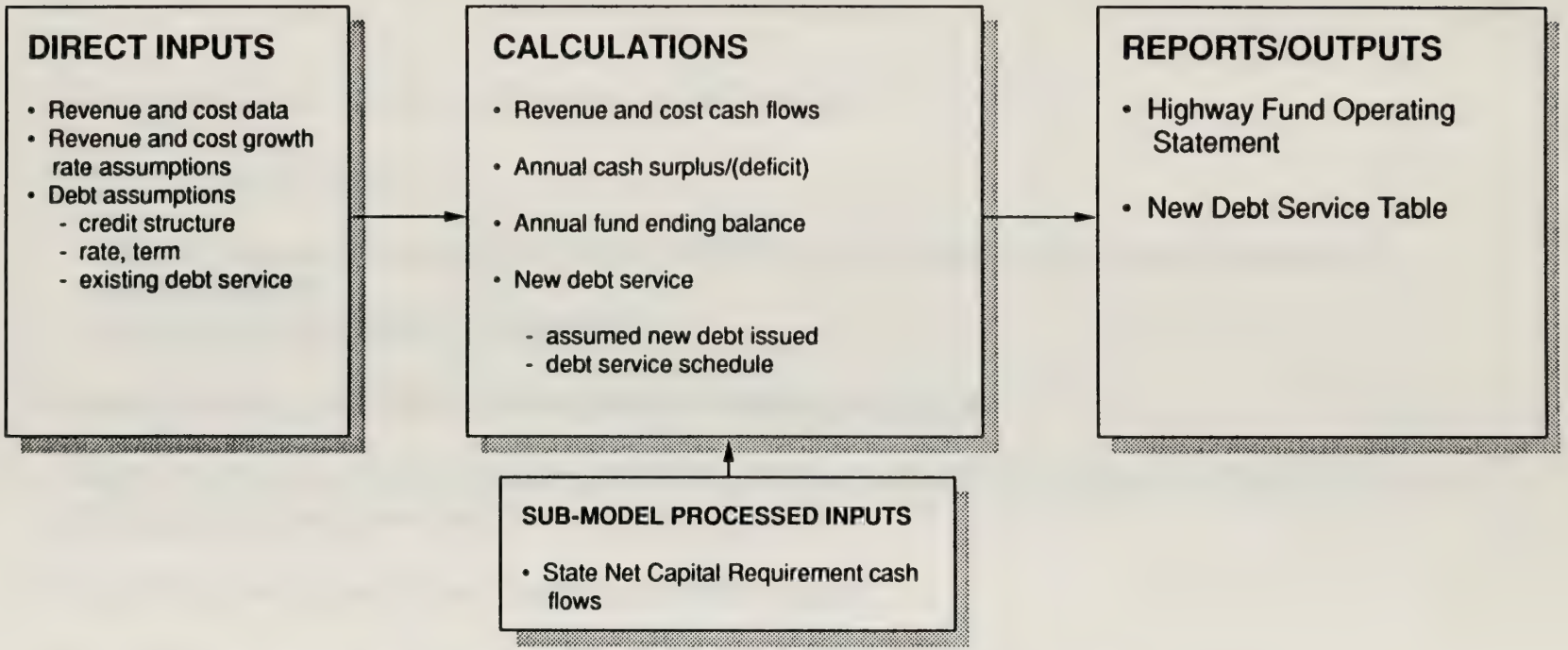
Funding Feasibility Decision Flow



- Yearly capital requirement will be expressed as "New Debt Issued" or "Proceeds of New Debt Issued" (the MITA scenarios do not simulate the effect of issuance costs and reserving; the MITTF scenarios do)
- State net capital requirements cash flow must be prepared as input data for this analysis
- The model is set up to automatically calculate new debt service and loop it into the Fund Operating Statement
  - the Debt Service Coverage Ratio formula should be checked to ensure consistency with credit structure assumptions
  - the term and interest rate assumptions in the New Debt Service Table (below the Operating Statement) should be verified
- Scenarios can be configured to simulate "pay as you go" financing as part of the capital program
- The State Net Capital Requirement Statement can be linked to financing scenarios, providing interactive capability

The "Status Quo" Transportation Funding Scenario

Highway Fund Model -- Functional View



- The Highway Fund Model is a stand-alone sub-module -- its outputs are not linked to any other part of the model
- The direct inputs tie to the MITA Base Case data and growth assumptions
  - aggregate revenue (primarily motor fuel tax and registry fees) is assumed to grow at an annual rate of 2.2% -- no tax or fee increases are assumed
  - operating costs are assumed to grow at the base rate (5.6% p.a. for Transit, 7% for Highway and Other)
- Sub-model input from State Net Capital Requirement Statement -- can be scenario-driven
- Calculations are similar to those detailed in discussion of the Fund Operating Statement; major difference is the credit structure (general vs. special obligation, level principal payments vs. level debt service)
- It is assumed that the entire capital spending agenda will be funded with general obligation debt (25 year term, 7.25% interest rate) -- no program reductions are assumed

Summary Module

Next Steps

- Training of EOTC personnel on the model has been completed
- This is a "living" model
  - Needs constant refinement and updated data to improve the level of detail and sophistication
  - It should be modified as required
- Federal funding cash flow assumptions should be refined
- Credit structure and debt assumptions should be refined, particularly if the Trust Fund concept is to be presented to the rating agencies
- Operating costs should be studied in further detail
- Toll and fare revenue projections should be studied in further detail

Summary Module

Complete Printout

NOTE: This printout is the product of the most recent update of the Summary Module (4/27/92), which may not reflect current policy scenarios, data, and assumptions. Users of this Module should ensure that a thorough update of its direct inputs is accomplished before embarking on new analysis.

FARE INCREASE IMPACT MODEL

17-Jun-92 14:22

($ IN MILLIONS UNLESS OTHERWISE INDICATED)	BASE	FISCAL YEARS (w/ fare increases):									
	1993	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
TOLLS											
THT											
Transactions (millions)	NA			13.41	13.74	14.07	37.33	38.19	38.95	39.83	40.71
Base Annual Change Rate (from prior year)					2.43%	2.39%	165.39%	2.31%	1.99%	2.24%	2.21%
Nominal Toll ($)	NA			$1.70	$1.70	$1.70	$2.70	$2.70	$2.80	$2.80	$2.80
Revenue/Transaction ($)	NA			$0.60	$0.60	$0.59	$0.94	$0.95	$0.98	$0.98	$0.98
Rev per Trx/Nominal Toll	NA			35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%
Gross Revenue	NA			8.0	8.2	8.4	35.3	36.1	38.2	39.0	39.9
Operating Cost	NA			10.2	10.7	11.2	11.8	12.4	13.0	13.7	14.4
Net Revenue	NA			(2.2)	(2.5)	(2.9)	23.5	23.7	25.2	25.4	25.5
Tobin Bridge											
Traffic (millions)	12.00	9.30	9.44	9.15	9.28	9.42	8.73	8.86	8.95	9.08	9.22
Base Annual Growth		1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Percent Change in Toll		150.0%	0.0%	30.8%	0.0%	0.0%	58.8%	0.0%	3.7%	0.0%	0.0%
Elasticity Impact on Growth		-24.0%	0.0%	-4.6%	0.0%	0.0%	-8.8%	0.0%	-0.6%	0.0%	0.0%
Net Annual Growth in Traffic Volume		-22.5%	1.5%	-3.1%	1.5%	1.5%	-7.3%	1.5%	0.9%	1.5%	1.5%
Actual/Nominal Toll ($)	$0.50	$1.30	$1.30	$1.70	$1.70	$1.70	$2.70	$2.70	$2.80	$2.80	$2.80
Gross Revenue	6.0	12.1	12.3	15.5	15.8	16.0	23.6	23.9	25.1	25.4	25.8
Operating Cost	6.0	6.0	6.3	6.6	6.9	7.3	7.7	8.0	8.4	8.9	9.3
Net Revenue	0.0	6.1	6.0	8.9	8.8	8.7	15.9	15.9	16.6	16.6	16.5
THT/Tobin Combined Net Revenue	0.0	6.1	6.0	6.7	6.3	5.8	39.4	39.6	41.8	41.9	42.0
TRANSIT OPERATIONS											
MBTA											
Base Ridership (millions)	NA	162.34	169.00	175.93	183.14	190.65	198.46	206.60	215.07	223.89	233.07
Ridership loss due to fare increases*	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Adjusted Ridership (millions)	NA	162.34	169.00	175.93	183.14	190.65	198.46	206.60	215.07	223.89	233.07
Average Fare ($)	NA	$0.85	$1.00	$1.00	$1.25	$1.25	$1.25	$1.25	$1.25	$1.25	$1.25
Gross Fare Revenue	NA	138.3	169.0	175.9	228.9	238.3	248.1	258.3	268.8	279.9	291.3
Other Operating Revenue	NA	13.0	14.4	15.8	17.5	19.3	21.3	23.5	26.0	28.7	31.7
State Contract Asst (RR svc out of dist)		13.3	14.2	15.3	16.3	17.5	18.8	20.1	21.5	23.0	24.7
Subtotal MBTA Operating Revenue	NA	164.6	197.6	207.0	262.8	275.1	288.2	301.9	316.3	331.6	347.7
RTAs											
Gross Fare Revenue	NA	17.6	18.5	19.4	20.4	21.4	22.5	23.6	24.8	26.0	27.3
Other Operating Revenue	NA	8.1	8.9	9.8	10.8	11.9	13.0	14.3	15.8	17.4	19.1
Subtotal RTA Operating Revenue	NA	25.7	27.4	29.2	31.2	33.3	35.5	37.9	40.5	43.4	46.4
Total Transit Operating Revenue	NA	190.3	225.0	236.2	293.9	308.4	323.7	339.8	356.9	375.0	394.1
		* Ridership was assumed to be inelastic									
TURNPIKE											
SUMNER TUNNEL											
Bechtel Traffic data	52454	52454	53336	47681	48841	50009	29837	30528	31135	31833	32537
Annual Change Rate (from prior yr)	4.11%	4.11%	1.68%	-10.60%	2.43%	2.39%	-40.34%	2.32%	1.99%	2.24%	2.21%
Transactions (millions)	17.43	17.43	17.73	15.85	16.23	16.62	9.92	10.15	10.35	10.58	10.81
Nominal Toll ($)	$1.00	$1.30	$1.30	$1.70	$1.70	$1.70	$2.70	$2.70	$2.80	$2.80	$2.80
Revenue/Transaction ($)	$0.98	$1.27	$1.27	$1.67	$1.67	$1.67	$2.65	$2.65	$2.74	$2.74	$2.74
Gross Toll Revenue	17.1	22.2	23.0	26.9	27.6	28.3	26.8	27.4	29.0	29.6	30.3
Other Operating Revenue	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Gross Total Revenue	17.2	22.3	23.2	27.1	27.7	28.4	26.9	27.5	29.1	29.8	30.4
Operating Cost	9.5	9.5	10.0	10.5	11.0	11.5	12.1	12.7	13.4	14.0	14.7
Net Revenue	7.7	12.8	13.2	16.6	16.7	16.8	14.8	14.8	15.8	15.7	15.7
TURNPIKE (Lazard Scenario)											
Bechtel Traffic data	432981	432981	438947	443052	451411	459928	447959	456410	462139	470858	474820
Annual Change Rate (from prior yr)	1.38%	1.38%	1.38%	0.94%	1.89%	1.89%	-2.60%	1.89%	1.26%	1.89%	0.84%
Transactions (millions)	142.19	142.19	144.15	145.49	148.24	151.04	147.11	149.88	151.76	154.63	155.93
Nominal Average Toll ($)	$1.50	$1.50	$1.50	$1.70	$1.70	$1.70	$1.70	$1.70	$2.00	$2.00	$2.00
Revenue/Transaction ($)	$1.03	$1.03	$1.03	$1.16	$1.16	$1.16	$1.16	$1.16	$1.37	$1.37	$1.37
Gross Toll Revenue	145.8	145.8	147.8	169.1	172.3	175.6	171.0	174.2	207.5	211.4	213.2
Other Operating Revenue	8.5	8.5	8.9	9.3	9.8	10.3	10.8	11.3	11.9	12.5	13.1
Gross Total Revenue	154.3	154.3	156.7	178.4	182.1	185.8	181.8	185.5	219.4	223.9	226.3
Operating Cost	60.0	60.0	63.0	66.1	69.4	72.9	76.5	80.4	84.4	88.6	93.0
Net Revenue	94.3	94.3	93.7	112.3	112.7	112.9	105.2	105.2	135.0	135.3	133.3
TURNPIKE (Surgical Approach Scenario)											
Nominal Average Toll	$1.35	$1.75	$1.75	$2.75	$2.75	$2.75	$3.50	$3.50	$4.00	$4.00	$4.00
Additional Elasticity Effect on Volume		-2.37%	0.00%	-8.51%	0.00%	0.00%	-8.73%	0.00%	-8.18%	0.00%	0.00%
Net Annual Change Rate (from prior yr)		-0.99%	1.36%	-7.57%	1.89%	1.89%	-11.33%	1.89%	-6.92%	1.89%	0.84%
Transactions (millions)	140.25	138.86	140.78	130.12	132.57	135.07	119.77	122.03	113.58	115.72	116.70
Revenue/Transaction ($)	$0.92	$1.20	$1.20	$1.88	$1.88	$1.88	$2.39	$2.39	$2.73	$2.73	$2.73
Gross Toll Revenue	129.4	166.2	168.4	244.6	249.3	254.0	286.6	292.0	310.6	316.5	319.1
Other Operating Revenue	8.5	8.5	8.9	9.3	9.8	10.3	10.8	11.3	11.9	12.5	13.1
Gross Total Revenue	137.9	174.6	177.3	254.0	259.0	264.2	297.4	303.3	322.5	329.0	332.3
TURNPIKE (Grand Total, Lazard Scenario)											
Transactions (millions)	159.6	159.6	161.9	161.3	164.5	167.7	157.0	160.0	162.1	165.2	166.7
Gross Toll Revenue	162.9	168.0	170.9	196.1	199.9	203.8	197.8	201.6	236.5	241.1	243.5
Other Operating Revenue	8.6	8.6	9.0	9.4	9.9	10.4	10.9	11.5	12.0	12.6	13.3
Total Gross Revenue	171.5	176.6	179.9	205.5	209.8	214.2	208.7	213.1	248.5	253.7	256.8
Operating Cost	69.5	69.5	72.9	76.6	80.4	84.4	88.6	93.1	97.7	102.6	107.8
Net Revenue	102.0	107.1	106.9	128.9	129.4	129.8	120.0	120.0	150.8	151.1	149.0

Massachusetts Intermodal Transportation Authority
Public Transportation Trust Fund Cash Flows (1993–2002)

SCENARIO: BASECASE

(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	58	241	383	454	480	484	473	421	344	217		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Cigarette Tax	25	25	25	25	25	25	25	25	25	25	125	250
Registry Fees	411	432	430	452	451	474	474	498	499	524	2,176	4,645
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	134	137	140	144	148	152	156	160	164	168	703	1,503
Operating Revenues:												
Tolls (THT & Tobin Bridge – Net)	0	6	4	4	4	6	6	6	6	6	18	48
Transit Operations	190	199	208	218	228	239	251	263	276	290	1,043	2,362
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Turnpike Revenue	171	180	189	198	208	217	228	239	251	264	946	2,145
MassPort (Net)	20	21	22	23	24	25	26	27	28	29	110	245
State General Fund (Local Assessment Match)	134	137	140	144	148	152	156	160	164	168	703	1,503
Interest Income	10	10	10	10	10	10	10	10	10	10	50	100
Total Income	1,677	1,735	1,762	1,819	1,854	1,915	1,954	2,017	2,059	2,127	8,847	18,919
EXPENSE												
Administration (MITA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	666	703	743	785	830	879	931	986	1,046	3,530	8,202
Highway	189	202	216	231	247	264	282	302	323	346	1,085	2,602
Registry	38	40	42	44	46	48	50	53	56	59	210	476
Public Safety	85	89	93	98	103	108	113	119	125	131	468	1,064
Operating Efficiencies	0	(10)	(25)	(40)	(55)	(55)	(55)	(55)	(55)	(55)	(130)	(405)
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	206	424
Debt Service:												
MBTA Refundings	190	190	190	190	190	190	190	190	190	190	950	1,900
MHD Refundings	130	130	130	130	130	130	130	130	130	130	650	1,300
MassPike Refundings	37	37	37	37	37	37	37	37	37	37	185	370
New Debt Issues	51	102	152	203	203	203	203	203	203	203	711	1,726
Total Expense	1,495	1,593	1,690	1,794	1,850	1,926	2,006	2,094	2,186	2,285	8,421	18,918
Annual Cash Surplus/(Deficit)	183	142	72	25	4	(11)	(52)	(77)	(127)	(158)	426	1
Ending Cash Balance	241	383	454	480	484	473	421	344	217	59		
MEMO: Assumed New Debt Issued	600	600	600	600	0	0	0	0	0	0	2,400	2,400
MEMO: Adjusted Gross Revenue Coverage	3.58	3.29	3.00	2.81	2.86	2.94	2.99	3.08	3.14	3.23		

SCENARIO DESCRIPTION: The initial amounts of both Local Assessments and State Matching Funds are set at $134 million.
Beginning cash balance is from FY 92 Highway Fund receipts. No toll increases. Fare increases keep pace with inflation.

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Massachusetts Intermodal Transportation Authority
Public Transportation Trust Fund Cash Flows (1993–2002)

SCENARIO: BASECASE (Variant 1)

(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	58	201	303	334	318	278	221	121	(6)	(185)		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Cigarette Tax	25	25	25	25	25	25	25	25	25	25	125	250
Registry Fees	411	432	430	452	451	474	474	498	499	524	2,176	4,645
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	114	117	120	123	126	129	132	135	138	141	600	1,275
Operating Revenues:												
Tolls (THT & Tobin Bridge – Net)	0	6	4	4	4	6	6	6	6	6	18	48
Transit Operations	190	199	208	218	228	239	251	263	276	290	1,043	2,362
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Turnpike Revenue	171	180	189	198	208	217	228	239	251	264	946	2,145
MassPort (Net)	20	21	22	23	24	25	26	27	28	29	110	245
State General Fund (Local Assessment Match)	114	117	120	123	126	129	132	135	138	141	600	1,275
Interest Income	10	10	10	10	10	10	10	10	10	10	50	100
Total Income	1,637	1,695	1,722	1,777	1,810	1,869	1,906	1,967	2,007	2,073	8,641	18,463
EXPENSE												
Administration (MITA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	666	703	743	785	830	879	931	986	1,046	3,530	8,202
Highway	189	202	216	231	247	264	282	302	323	346	1,085	2,602
Registry	38	40	42	44	46	48	50	53	56	59	210	476
Public Safety	85	89	93	98	103	108	113	119	125	131	468	1,064
Operating Efficiencies	0	(10)	(25)	(40)	(55)	(55)	(55)	(55)	(55)	(55)	(130)	(405)
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	206	424
Debt Service:												
MBTA Refundings	190	190	190	190	190	190	190	190	190	190	950	1,900
MHD Refundings	130	130	130	130	130	130	130	130	130	130	650	1,300
MassPike Refundings	37	37	37	37	37	37	37	37	37	37	185	370
New Debt Issues	51	102	152	203	203	203	203	203	203	203	711	1,726
Total Expense	1,495	1,593	1,690	1,794	1,850	1,926	2,006	2,094	2,186	2,285	8,421	18,918
Annual Cash Surplus/(Deficit)	143	102	32	(17)	(40)	(57)	(100)	(127)	(179)	(212)	220	(455)
Ending Cash Balance	201	303	334	318	278	221	121	(6)	(185)	(397)		
MEMO: Assumed New Debt Issued	600	600	600	600	0	0	0	0	0	0	2,400	2,400
MEMO: Adjusted Gross Revenue Coverage	3.48	3.20	2.92	2.74	2.78	2.86	2.91	2.99	3.04	3.14		

SCENARIO DESCRIPTION: Initial Local Assessment and State Matching Fund amounts each were reduced by $20 million. Otherwise identical to BASECASE.

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Massachusetts Intermodal Transportation Authority
Public Transportation Trust Fund Cash Flows (1993–2002)

SCENARIO: (1) Constrained Operating Costs

(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	58	326	570	764	938	1,065	1,163	1,241	1,311	1,357		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Cigarette Tax	25	25	25	25	25	25	25	25	25	25	125	250
Registry Fees	411	432	430	452	451	474	474	498	499	524	2,176	4,645
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	134	137	140	144	148	152	156	160	164	168	703	1,503
Operating Revenues:												
Tolls (THT & Tobin Bridge – Net)	0	6	4	4	4	6	6	6	6	6	18	48
Transit Operations	190	199	208	218	228	239	251	263	276	290	1,043	2,362
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Turnpike Revenue	171	180	189	198	208	217	228	239	251	264	946	2,145
MassPort (Net)	20	21	22	23	24	25	26	27	28	29	110	245
State General Fund (Local Assessment Match)	134	137	140	144	148	152	156	160	164	168	703	1,503
Interest Income	10	10	10	10	10	10	10	10	10	10	50	100
Total Income	1,677	1,735	1,762	1,819	1,854	1,915	1,954	2,017	2,059	2,127	8,847	18,919
EXPENSE												
Administration (MITA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	658	684	711	739	769	800	832	865	900	3,425	7,591
Highway	189	197	205	213	222	231	240	250	260	270	1,026	2,277
Registry	38	40	42	44	46	48	50	53	56	59	210	476
Public Safety	0	0	0	0	0	0	0	0	0	0	0	0
Operating Efficiencies	0	(10)	(25)	(40)	(55)	(55)	(55)	(55)	(55)	(55)	(130)	(405)
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	206	424
Debt Service:												
MBTA Refundings	190	190	190	190	190	190	190	190	190	190	950	1,900
MHD Refundings	130	130	130	130	130	130	130	130	130	130	650	1,300
MassPike Refundings	37	37	37	37	37	37	37	37	37	37	185	370
New Debt Issues	51	102	152	203	254	296	307	326	339	360	762	2,390
Total Expense	1,410	1,491	1,567	1,646	1,727	1,817	1,876	1,947	2,013	2,089	7,840	17,582
Annual Cash Surplus/(Deficit)	268	244	195	173	127	98	78	71	46	38	1,007	1,337
Ending Cash Balance	326	570	764	938	1,065	1,163	1,241	1,311	1,357	1,395		
MEMO: Assumed New Debt Issued	600	600	600	600	600	500	125	225	150	250	3,000	4,250
MEMO: Adjusted Gross Revenue Coverage	3.58	3.29	3.00	2.81	2.62	2.53	2.52	2.53	2.52	2.52		

SCENARIO DESCRIPTION: MITA operating costs (Highway and Transit) are constrained to 4% growth. Public Safety costs out of MITA.

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Massachusetts Intermodal Transportation Authority
Public Transportation Trust Fund Cash Flows (1993–2002)

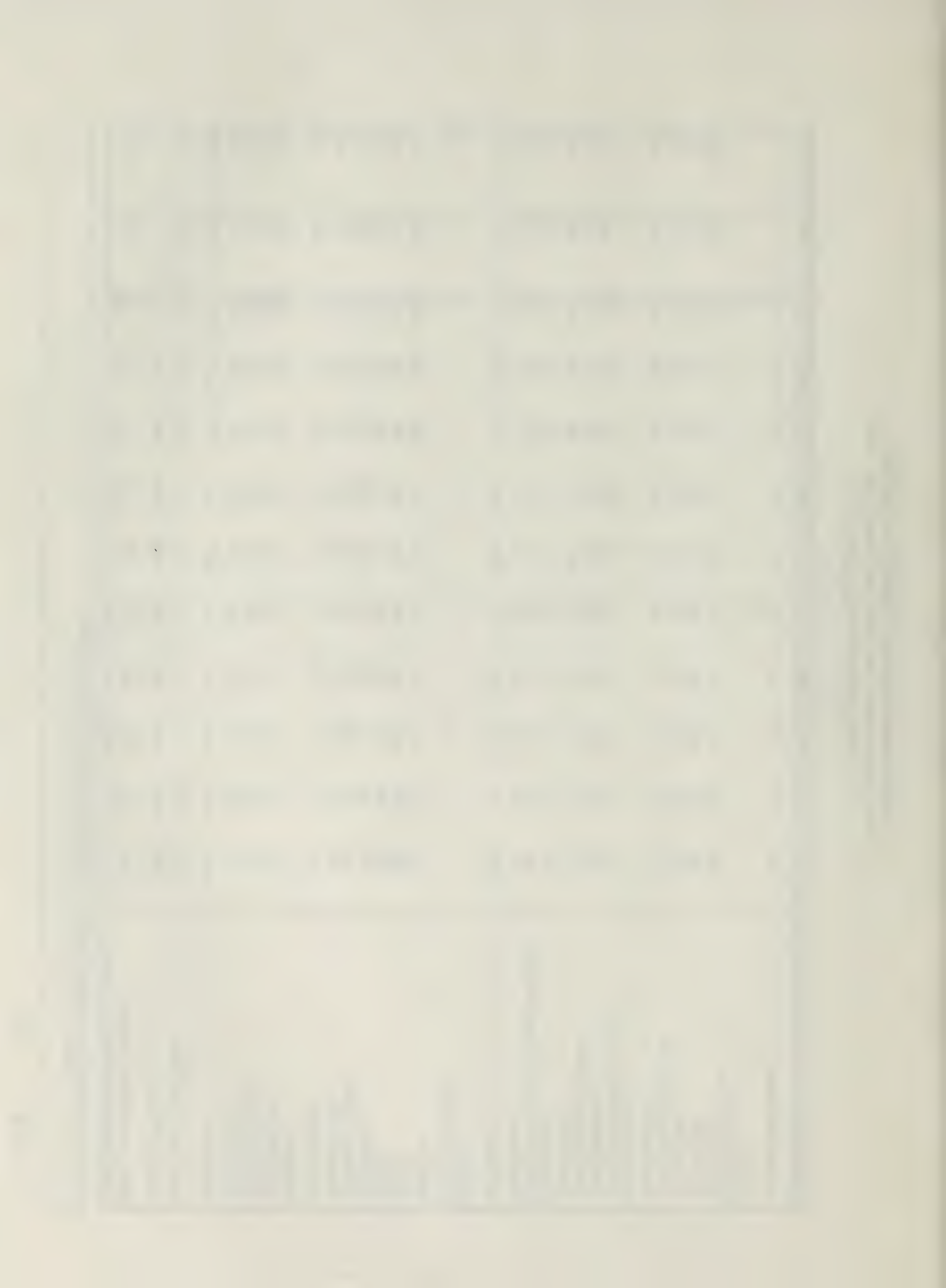
SCENARIO: (2) Fare Increases

(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	58	253	421	539	655	696	719	699	686	621		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Cigarette Tax	25	25	25	25	25	25	25	25	25	25	125	250
Registry Fees	411	432	430	452	451	474	474	498	499	524	2,176	4,645
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	134	137	140	144	148	152	156	160	164	168	703	1,503
Operating Revenues:												
Tolls (THT & Tobin Bridge – Net)	6	6	7	6	6	39	40	42	42	42	31	236
Transit Operations	190	225	236	294	308	324	340	357	375	394	1,253	3,043
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Turnpike Revenue	177	180	205	210	214	209	213	249	254	257	986	2,168
MassPort (Net)	20	21	22	23	24	25	26	27	28	29	110	245
State General Fund (Local Assessment Match)	134	137	140	144	148	152	156	160	164	168	703	1,503
Interest Income	10	10	10	10	10	10	10	10	10	10	50	100
Total Income	1,689	1,761	1,809	1,909	1,942	2,025	2,062	2,157	2,197	2,260	9,110	19,811
EXPENSE												
Administration (MITA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	666	703	743	785	830	879	931	986	1,046	3,530	8,202
Highway	189	202	216	231	247	264	282	302	323	346	1,085	2,602
Registry	38	40	42	44	46	48	50	53	56	59	210	476
Public Safety	85	89	93	98	103	108	113	119	125	131	468	1,064
Operating Efficiencies	0	(10)	(25)	(40)	(55)	(55)	(55)	(55)	(55)	(55)	(130)	(405)
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	206	424
Debt Service:												
MBTA Refundings	190	190	190	190	190	190	190	190	190	190	950	1,900
MHD Refundings	130	130	130	130	130	130	130	130	130	130	650	1,300
MassPike Refundings	37	37	37	37	37	37	37	37	37	37	185	370
New Debt Issues	51	102	152	203	254	279	279	279	279	279	762	2,157
Total Expense	1,495	1,593	1,690	1,794	1,901	2,002	2,082	2,170	2,262	2,361	8,472	19,349
Annual Cash Surplus/(Deficit)	195	168	119	115	41	23	(20)	(13)	(65)	(101)	638	462
Ending Cash Balance	253	421	539	655	696	719	699	686	621	520		
MEMO: Assumed New Debt Issued	600	600	600	600	600	300	0	0	0	0	3,000	3,300
MEMO: Adjusted Gross Revenue Coverage	3.61	3.29	3.04	2.84	2.63	2.63	2.67	2.79	2.82	2.89		

SCENARIO DESCRIPTION: Summer Tunnel goes to $1.30 in 93; $1.70 in 95. MassPike average nominal toll goes to $1.50 in 93; $1.70 in 96. Tobin Bridge goes to $1.30 in 93; $1.70 in 96. MBTA average fare goes to $1.00 in 94; $1.25 in 96.

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Massachusetts Intermodal Transportation Authority
Public Transportation Trust Fund Cash Flows (1993–2002)

SCENARIO: (3) General Fund Elimination

(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	58	317	534	679	777	825	856	844	805	714		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Cigarette Tax	25	25	25	25	25	25	25	25	25	25	125	250
Registry Fees	411	432	430	452	451	474	474	498	499	524	2,176	4,645
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	134	137	140	144	148	152	156	160	164	168	703	1,503
Operating Revenues:												
Tolls (THT & Tobin Bridge – Net)	0	6	4	4	4	6	6	6	6	6	18	48
Transit Operations	190	199	208	218	228	239	251	263	276	290	1,043	2,362
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Turnpike Revenue	171	180	189	198	208	217	228	239	251	264	946	2,145
MassPort (Net)	20	21	22	23	24	25	26	27	28	29	110	245
Motor Vehicle Sales Tax	210	212	214	216	218	220	222	224	226	228	1,070	2,190
Interest Income	10	10	10	10	10	10	10	10	10	10	50	100
Total Income	1,753	1,810	1,836	1,891	1,924	1,983	2,020	2,081	2,121	2,187	9,214	19,606
EXPENSE												
Administration (MITA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	666	703	743	785	830	879	931	986	1,046	3,530	8,202
Highway	189	202	216	231	247	264	282	302	323	346	1,085	2,602
Registry	38	40	42	44	46	48	50	53	56	59	210	476
Public Safety	85	89	93	98	103	108	113	119	125	131	468	1,064
Operating Efficiencies	0	(10)	(25)	(40)	(55)	(55)	(55)	(55)	(55)	(55)	(130)	(405)
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	206	424
Debt Service:												
MBTA Refundings	190	190	190	190	190	190	190	190	190	190	950	1,900
MHD Refundings	130	130	130	130	130	130	130	130	130	130	650	1,300
MassPike Refundings	37	37	37	37	37	37	37	37	37	37	185	370
New Debt Issues	51	102	152	203	229	229	229	229	229	229	737	1,882
Total Expense	1,495	1,593	1,690	1,794	1,876	1,952	2,032	2,120	2,212	2,311	8,447	19,074
Annual Cash Surplus/(Deficit)	259	217	146	97	48	31	(12)	(39)	(91)	(124)	767	532
Ending Cash Balance	317	534	679	777	825	856	844	805	714	590		
MEMO: Assumed New Debt Issued	600	600	600	600	300	0	0	0	0	0	2,700	2,700
MEMO: Adjusted Gross Revenue Coverage	3.76	3.45	3.15	2.94	2.85	2.93	2.97	3.06	3.10	3.19		

SCENARIO DESCRIPTION: State General Fund match of Local Assessment is replaced by Motor Vehicle Sales Tax.

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Massachusetts Intermodal Transportation Authority
Public Transportation Trust Fund Cash Flows (1993–2002)

SCENARIO: (4) Optimistic

(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	58	414	759	1,074	1,410	1,695	1,962	2,172	2,393	2,589		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Cigarette Tax	25	25	25	25	25	25	25	25	25	25	125	250
Registry Fees	411	432	430	452	451	474	474	498	499	524	2,176	4,645
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	134	137	140	144	148	152	156	160	164	168	703	1,503
Operating Revenues:												
Tolls (THT & Tobin Bridge – Net)	6	6	7	6	6	39	40	42	42	42	31	236
Transit Operations	190	225	236	294	308	324	340	357	375	394	1,253	3,043
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Turnpike Revenue	177	180	205	210	214	209	213	249	254	257	986	2,168
MassPort (Net)	20	21	22	23	24	25	26	27	28	29	110	245
Motor Vehicle Sales Tax	210	212	214	216	218	220	222	224	226	228	1,070	2,190
Interest Income	10	10	10	10	10	10	10	10	10	10	50	100
Total Income	1,765	1,836	1,883	1,981	2,012	2,093	2,128	2,221	2,259	2,320	9,477	20,498
EXPENSE												
Administration (MITA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	658	684	711	739	769	800	832	865	900	3,425	7,591
Highway	189	197	205	213	222	231	240	250	260	270	1,026	2,277
Registry	38	40	42	44	46	48	50	53	56	59	210	476
Public Safety	0	0	0	0	0	0	0	0	0	0	0	0
Operating Efficiencies	0	(10)	(25)	(40)	(55)	(55)	(55)	(55)	(55)	(55)	(130)	(405)
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	206	424
Debt Service:												
MBTA Refundings	190	190	190	190	190	190	190	190	190	190	950	1,900
MHD Refundings	130	130	130	130	130	130	130	130	130	130	650	1,300
MassPike Refundings	37	37	37	37	37	37	37	37	37	37	185	370
New Debt Issues	51	102	152	203	254	305	349	379	389	406	762	2,590
Total Expense	1,410	1,491	1,567	1,646	1,727	1,826	1,918	2,000	2,063	2,135	7,840	17,782
Annual Cash Surplus/(Deficit)	356	345	316	335	285	267	210	222	196	185	1,637	2,716
Ending Cash Balance	414	759	1,074	1,410	1,695	1,962	2,172	2,393	2,589	2,774		
MEMO: Assumed New Debt Issued	600	600	600	600	600	600	525	350	125	200	3,000	4,800
MEMO: Adjusted Gross Revenue Coverage	3.79	3.45	3.18	2.96	2.74	2.63	2.49	2.50	2.49	2.49		

SCENARIO DESCRIPTION: All assumptions from Scenarios 1, 2, and 3 in effect.

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Massachusetts Intermodal Transportation Authority
Public Transportation Trust Fund Cash Flows (1993–2002)

SCENARIO: (5) Optimistic Revenue Only

(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	58	329	572	764	952	1,063	1,128	1,123	1,123	1,069		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Cigarette Tax	25	25	25	25	25	25	25	25	25	25	125	250
Registry Fees	411	432	430	452	451	474	474	498	499	524	2,176	4,645
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	134	137	140	144	148	152	156	160	164	168	703	1,503
Operating Revenues:												
Tolls (THT & Tobin Bridge – Net)	6	6	7	6	6	39	40	42	42	42	31	236
Transit Operations	190	225	236	294	308	324	340	357	375	394	1,253	3,043
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Turnpike Revenue	177	180	205	210	214	209	213	249	254	257	986	2,168
MassPort (Net)	20	21	22	23	24	25	26	27	28	29	110	245
Motor Vehicle Sales Tax	210	212	214	216	218	220	222	224	226	228	1,070	2,190
Interest Income	10	10	10	10	10	10	10	10	10	10	50	100
Total Income	1,765	1,836	1,883	1,981	2,012	2,093	2,128	2,221	2,259	2,320	9,477	20,498
EXPENSE												
Administration (MITA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	666	703	743	785	830	879	931	986	1,046	3,530	8,202
Highway	189	202	216	231	247	264	282	302	323	346	1,085	2,602
Registry	38	40	42	44	46	48	50	53	56	59	210	476
Public Safety	85	89	93	98	103	108	113	119	125	131	468	1,064
Operating Efficiencies	0	(10)	(25)	(40)	(55)	(55)	(55)	(55)	(55)	(55)	(130)	(405)
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	206	424
Debt Service:												
MBTA Refundings	190	190	190	190	190	190	190	190	190	190	950	1,900
MHD Refundings	130	130	130	130	130	130	130	130	130	130	650	1,300
MassPike Refundings	37	37	37	37	37	37	37	37	37	37	185	370
New Debt Issues	51	102	152	203	254	305	330	330	330	330	762	2,387
Total Expense	1,495	1,593	1,690	1,794	1,901	2,028	2,133	2,221	2,313	2,412	8,472	19,579
Annual Cash Surplus/(Deficit)	271	243	193	187	111	65	(5)	1	(54)	(92)	1,005	919
Ending Cash Balance	329	572	764	952	1,063	1,128	1,123	1,123	1,069	977		
MEMO: Assumed New Debt Issued	600	600	600	600	600	600	300	0	0	0	3,000	3,900
MEMO: Adjusted Gross Revenue Coverage	3.79	3.45	3.18	2.96	2.74	2.63	2.56	2.67	2.70	2.76		

SCENARIO DESCRIPTION: All assumptions from Scenarios 2 and 3 in effect.

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Massachusetts Intermodal Transportation Trust Fund
Cash Flows (1993–2002)

SCENARIO: (8) MITTF Base Case

(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	58	482	848	1,129	1,351	1,485	1,552	1,553	1,531	1,460		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Cigarette Tax	25	25	25	25	25	25	25	25	25	25	125	250
Registry Fees	411	432	430	452	451	474	474	498	499	524	2,176	4,645
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	134	137	140	144	148	152	156	160	164	168	703	1,503
Operating Revenues:												
Congestion Pricing Surcharge (Net)	0	0	0	0	0	0	0	0	0	0	0	0
Transit Operations	190	199	208	218	228	239	251	263	276	290	1,043	2,362
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Turnpike Revenue	0	0	0	0	0	0	0	0	0	0	0	0
MassPort (Net)	0	0	0	0	0	0	0	0	0	0	0	0
State General Fund (Local Assessment Match)	134	137	140	144	148	152	156	160	164	168	703	1,503
Interest Income	5	5	5	5	5	5	5	5	5	5	25	50
Total Income	1,481	1,523	1,542	1,589	1,613	1,662	1,689	1,740	1,769	1,823	7,748	16,431
EXPENSE												
Administration (MITA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	666	703	743	785	830	879	931	986	1,046	3,530	8,202
Highway	114	122	131	140	150	161	172	184	197	211	657	1,582
Registry	38	40	42	44	46	48	50	53	56	59	210	476
Public Safety	0	0	0	0	0	0	0	0	0	0	0	0
Operating Efficiencies	0	0	0	0	0	0	0	0	0	0	0	0
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	206	424
Debt Service:												
MBTA Refundings	80	80	80	80	80	80	80	80	80	80	400	800
MHD Refundings	0	0	0	0	0	0	0	0	0	0	0	0
MassPike Refundings	0	0	0	0	0	0	0	0	0	0	0	0
New Debt Issues	51	102	152	203	254	305	330	330	330	330	762	2,387
Total Expense	1,058	1,157	1,260	1,368	1,479	1,595	1,688	1,762	1,840	1,924	6,321	15,130
Annual Cash Surplus/(Deficit)	424	366	282	221	134	67	1	(22)	(71)	(101)	1,427	1,301
Ending Cash Balance	482	848	1,129	1,351	1,485	1,552	1,553	1,531	1,460	1,359		
MEMO: Assumed New Debt Issued	600	600	600	600	600	600	300	0	0	0	3,000	3,900
MEMO: Adjusted Gross Revenue Coverage	9.65	7.13	5.63	4.75	4.07	3.63	3.44	3.54	3.58	3.67		

SCENARIO DESCRIPTION: All assumptions from MITA Base Case in effect. All operating revenue removed. Local Assessment and General Fund Match removed. Interest income removed. Administration expense assumed to be $5 million/year. Operating expenses reduced to EOTC, MDH, MAC, and RMV. Pension and Ch. 90 expenses remain. Debt refunding is confined to MBTA short term instruments (necessary to accomplish forward funding).

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Massachusetts Intermodal Transportation Trust Fund
Cash Flows (1993–2002)

FLAGS (0=off, 1=on)	
Congestion Pricing	1
Registry Fee Increases	1

SCENARIO: (7) MITTF All Revenue Increases

(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	58	110	166	150	125	115	110	106	100	92		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Motor Vehicle Sales Tax	210	212	214	216	218	220	222	224	226	228	1,070	2,190
Registry Fees	411	440	447	478	487	521	533	570	586	627	2,263	5,100
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	134	137	140	144	148	152	156	160	164	168	703	1,503
Operating Revenues:												
Congestion Pricing Surcharge (Net)	0	0	100	104	108	112	116	120	124	128	312	912
Transit Operations	190	225	236	294	308	324	340	357	375	394	1,253	3,043
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Turnpike (Extension and C/S Tunnels) Revenue	68	69	79	81	82	80	82	96	98	99	379	834
THT/Tobin Bridge (Net)	6	6	7	6	6	39	40	42	42	42	31	236
Interest Income	3	6	8	8	6	6	6	5	5	5	30	57
Total Income	1,604	1,683	1,825	1,932	1,971	2,069	2,117	2,203	2,256	2,334	9,014	19,993
EXPENSE												
Administration (MTA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	666	703	743	785	830	879	931	986	1,046	3,530	8,202
Highway (incl. Extension and C/S Tunnels)	139	149	159	170	182	195	209	224	240	257	799	1,924
Registry	38	40	42	44	46	48	50	53	56	59	210	476
Public Safety	0	0	0	0	0	0	0	0	0	0	0	0
Operating Efficiencies	0	0	0	0	0	0	0	0	0	0	0	0
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	206	424
Debt Service:												
MBTA Refundings	80	80	80	80	80	80	80	80	80	80	400	800
MHD Refundings	0	0	0	0	0	0	0	0	0	0	0	0
MassPike Refundings	0	0	0	0	0	0	0	0	0	0	0	0
New Debt Issues	13	40	79	162	245	324	398	473	547	621	539	2,902
Total Expense	1,045	1,122	1,215	1,357	1,502	1,648	1,793	1,945	2,100	2,261	6,240	15,987
Annual Cash Surplus/(Deficit)	559	561	610	575	469	421	323	259	156	72	2,774	4,006
Cash Transfer to State	0	0	0	0	0	0	0	0	0	0	0	0
Cash Transfer to Capital Program	507	505	626	600	479	426	328	264	164	81	2,717	3,980
Total Cash Transfer	507	505	626	600	479	426	328	264	164	81	2,717	3,980
Ending Cash Balance	110	166	150	125	115	110	106	100	92	84		
MEMO: Assumed New Debt Issued	154	336	473	984	985	930	876	876	876	876	2,933	7,367
MEMO: Proceeds (Net Issuance Costs, Reserving)	141	308	433	900	900	850	800	800	800	800	2,682	6,732
MEMO: Adjusted Gross Revenue Coverage	13.68	10.92	8.34	5.65	4.27	3.55	3.05	2.72	2.44	2.25		

SCENARIO DESCRIPTION:

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Massachusetts Intermodal Transportation Trust Fund
Cash Flows (1993–2002)

FLAGS (0=off, 1=on)	
Congestion Pricing	0
Registry Fee Increases	0

SCENARIO: (8) MITTF Base Revenue

(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	58	162	195	210	167	115	110	106	101	93		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Motor Vehicle Sales Tax	210	212	214	216	218	220	222	224	226	228	1,070	2,190
Registry Fees	411	415	395	399	379	383	363	367	347	350	1,999	3,809
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	134	137	140	144	148	152	156	160	164	168	703	1,503
Operating Revenues:												
Congestion Pricing Surcharge (Net)	0	0	0	0	0	0	0	0	0	0	0	0
Transit Operations	190	225	236	294	308	324	340	357	375	394	1,253	3,043
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Turnpike (Extension and C/S Tunnels) Revenue	68	69	79	81	82	80	82	96	98	99	379	834
THT/Tobin Bridge (Net)	6	6	7	6	6	39	40	42	42	42	31	236
Interest Income	3	8	10	11	8	6	6	5	5	5	40	66
Total Income	1,604	1,660	1,675	1,752	1,757	1,819	1,831	1,880	1,893	1,929	8,448	17,799
EXPENSE												
Administration (MTA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	666	703	743	785	830	879	931	986	1,046	3,530	8,202
Highway (incl. Extension and C/S Tunnels)	139	149	159	170	182	195	209	224	240	257	799	1,924
Registry	38	40	42	44	46	48	50	53	56	59	210	476
Public Safety	0	0	0	0	0	0	0	0	0	0	0	0
Operating Efficiencies	0	0	0	0	0	0	0	0	0	0	0	0
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	208	424
Debt Service:												
MBTA Refundings	80	80	80	80	80	80	80	80	80	80	400	800
MHD Refundings	0	0	0	0	0	0	0	0	0	0	0	0
MassPike Refundings	0	0	0	0	0	0	0	0	0	0	0	0
New Debt Issues	18	46	73	100	128	156	184	212	239	267	365	1,423
Total Expense	1,050	1,128	1,209	1,295	1,385	1,480	1,579	1,684	1,792	1,907	6,066	14,508
Annual Cash Surplus/(Deficit)	554	532	465	457	372	339	251	197	101	21	2,381	3,291
Cash Transfer to State	0	0	0	0	0	0	0	0	0	0	0	0
Cash Transfer to Capital Program	450	500	450	500	424	344	256	202	109	30	2,324	3,265
Total Cash Transfer	450	500	450	500	424	344	256	202	109	30	2,324	3,265
Ending Cash Balance	162	195	210	167	115	110	106	101	93	84		
MEMO: Assumed New Debt Issued	216	342	328	328	328	328	328	328	328	328	1,542	3,184
MEMO: Proceeds (Net Issuance Costs, Reserving)	198	313	300	300	300	300	300	300	300	300	1,411	2,911
MEMO: Adjusted Gross Revenue Coverage	12.98	10.20	8.33	7.16	6.15	5.49	4.87	4.45	4.04	3.76		

SCENARIO DESCRIPTION:

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Massachusetts Intermodal Transportation Trust Fund
Cash Flows (1993–2002)

FLAGS (0=off, 1=on)	
Congestion Pricing	0
Registry Fee Increase	1

SCENARIO: (9) MITTF Aggressive Toll Increases

(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	58	162	266	275	309	176	140	140	140	139		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Motor Vehicle Sales Tax	210	212	214	216	218	220	222	224	226	228	1,070	2,190
Registry Fees	411	440	447	478	487	521	533	570	586	627	2,263	5,100
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	134	137	140	144	148	152	156	160	164	168	703	1,503
Operating Revenues:												
Congestion Pricing Surcharge (Net)	0	0	0	0	0	0	0	0	0	0	0	0
Transit Operations	190	225	315	334	354	375	398	422	447	474	1,418	3,534
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Turnpike (Extension and C/S Tunnels) Revenue	68	69	95	97	99	101	103	105	107	109	428	953
THT/Tobin Bridge (Net)	6	6	20	20	22	55	56	57	58	59	74	359
Interest Income	3	8	13	14	15	9	7	7	7	7	53	90
Total Income	1,604	1,685	1,838	1,904	1,951	2,048	2,097	2,174	2,231	2,315	8,982	19,847
EXPENSE												
Administration (MTA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	668	703	743	785	830	879	931	986	1,046	3,530	8,202
Highway (incl. Extension and C/S Tunnels)	139	149	159	170	182	195	209	224	240	257	799	1,924
Registry	38	40	42	44	46	48	50	53	56	59	210	476
Public Safety	0	0	0	0	0	0	0	0	0	0	0	0
Operating Efficiencies	0	0	0	0	0	0	0	0	0	0	0	0
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	206	424
Debt Service:												
MBTA Refundings	80	80	80	80	80	80	80	80	80	80	400	800
MHD Refundings	0	0	0	0	0	0	0	0	0	0	0	0
MassPike Refundings	0	0	0	0	0	0	0	0	0	0	0	0
New Debt Issues	18	50	93	175	252	326	400	474	548	622	588	2,958
Total Expense	1,050	1,132	1,229	1,370	1,509	1,650	1,795	1,946	2,101	2,262	6,289	16,043
Annual Cash Surplus/(Deficit)	554	553	609	534	442	398	302	229	130	53	2,693	3,804
Cash Transfer to State	0	0	0	0	0	0	0	0	0	0	0	0
Cash Transfer to Capital Program	450	450	600	500	575	434	302	229	131	53	2,575	3,724
Total Cash Transfer	450	450	600	500	575	434	302	229	131	53	2,575	3,724
Ending Cash Balance	162	266	275	309	176	140	140	140	139	138		
MEMO: Assumed New Debt Issued	216	396	510	984	903	876	876	876	876	876	3,011	7,389
MEMO: Proceeds (Net Issuance Costs, Reserving)	198	383	467	900	825	800	800	800	800	800	2,753	6,753
MEMO: Adjusted Gross Revenue Coverage	12.98	10.08	7.66	5.36	4.18	3.53	3.03	2.71	2.43	2.25		

SCENARIO DESCRIPTION:

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Massachusetts Intermodal Transportation Trust Fund
Cash Flows (1993–2002)

FLAGS (0=off, 1=on)	
Congestion Pricing	0
Registry Fee Increases	1

SCENARIO: (10) MITTF Registry Increases Only

(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	58	141	234	271	243	123	110	106	101	93		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Motor Vehicle Sales Tax	210	212	214	216	218	220	222	224	226	228	1,070	2,190
Registry Fees	411	440	447	478	487	521	533	570	586	627	2,263	5,100
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	134	137	140	144	148	152	156	160	164	168	703	1,503
Operating Revenues:												
Congestion Pricing Surcharge (Net)	0	0	0	0	0	0	0	0	0	0	0	0
Transit Operations	190	225	236	294	308	324	340	357	375	394	1,253	3,043
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Turnpike (Extension and C/S Tunnels) Revenue	68	69	79	81	82	80	82	96	98	99	379	834
THT/Tobin Bridge (Net)	6	6	7	6	6	39	40	42	42	42	31	236
Interest Income	3	7	12	14	12	6	6	5	5	5	47	74
Total Income	1,604	1,684	1,729	1,834	1,869	1,957	2,001	2,083	2,132	2,206	8,719	19,098
EXPENSE												
Administration (MTA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	666	703	743	785	830	879	931	986	1,046	3,530	8,202
Highway (incl. Extension and C/S Tunnels)	139	149	159	170	182	195	209	224	240	257	799	1,924
Registry	38	40	42	44	46	48	50	53	56	59	210	476
Public Safety	0	0	0	0	0	0	0	0	0	0	0	0
Operating Efficiencies	0	0	0	0	0	0	0	0	0	0	0	0
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	208	424
Debt Service:												
MBTA Refundings	80	80	80	80	80	80	80	80	80	80	400	800
MHD Refundings	0	0	0	0	0	0	0	0	0	0	0	0
MassPike Refundings	0	0	0	0	0	0	0	0	0	0	0	0
New Debt Issues	16	47	103	167	232	297	362	427	491	556	565	2,698
Total Expense	1,048	1,129	1,239	1,362	1,489	1,621	1,757	1,899	2,044	2,196	6,266	15,783
Annual Cash Surplus/(Deficit)	556	555	489	472	380	337	243	185	88	9	2,453	3,315
Cash Transfer to State	0	0	0	0	0	0	0	0	0	0	0	0
Cash Transfer to Capital Program	473	463	452	500	500	349	248	190	96	18	2,388	3,289
Total Cash Transfer	473	463	452	500	500	349	248	190	96	18	2,388	3,289
Ending Cash Balance	141	234	271	243	123	110	106	101	93	84		
MEMO: Assumed New Debt Issued	191	382	672	766	766	766	766	766	766	766	2,777	6,609
MEMO: Proceeds (Net Issuance Costs, Reserving)	175	350	615	700	700	700	700	700	700	700	2,540	6,040
MEMO: Adjusted Gross Revenue Coverage	13.25	10.31	7.25	5.54	4.45	3.80	3.29	2.96	2.68	2.48		

SCENARIO DESCRIPTION:

Massachusetts Intermodal Transportation Trust Fund
Cash Flows (1993–2002)

FLAGS (0=off, 1=on)	
Congestion Pricing/Fare Increases	1
Registry Fee Increases	1

SCENARIO: (11) MITTF All Revenue (Varied Debt)

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(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Operating Sub–Fund												
Beginning Cash Balance	58	179	284	382	427	447	474	459	381	249		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	134	137	140	144	148	152	156	160	164	168	703	1,503
Motor Vehicle Sales Tax	210	212	214	216	218	220	222	224	226	228	1,070	2,190
Operating Revenues:												
Transit Operations	190	225	236	294	308	324	340	357	375	394	1,253	3,043
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Interest Income	3	9	14	19	21	22	24	23	19	12	67	167
Total Income	1,119	1,171	1,198	1,274	1,303	1,333	1,364	1,393	1,420	1,445	6,066	13,021
EXPENSE												
Administration (MITA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	666	703	743	785	830	879	931	986	1,046	3,530	8,202
Highway (incl. Extension and C/S Tunnels)	139	149	159	170	182	195	209	224	240	257	799	1,924
Registry Operating Expense	38	40	42	44	46	48	50	53	56	59	210	476
Operating Efficiencies	0	0	0	0	0	0	0	0	0	0	0	0
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	206	424
Debt Service:												
MBTA Refundings	80	80	80	80	80	80	80	80	80	80	400	800
MHD Refundings	0	0	0	0	0	0	0	0	0	0	0	0
MassPike Refundings	0	0	0	0	0	0	0	0	0	0	0	0
New Debt Issues	0	0	0	0	0	0	0	0	0	0	0	0
Total Expense	1,032	1,082	1,136	1,195	1,257	1,324	1,395	1,472	1,553	1,640	5,701	13,085
Annual Cash Surplus/(Deficit)	87	89	62	79	46	10	(31)	(79)	(133)	(195)	364	(64)
Transfers Out to MITTF Cash Fund	0	0	0	67	41	4	0	0	0	0	108	112
Transfers In From MITTF Cash Fund	34	16	36	32	15	22	16	1	0	100	133	272
Ending Cash Balance	179	284	382	427	447	474	459	381	249	154		
MEMO: Assumed New Debt Issued	0	0	0	0	0	0	0	0	0	0	0	0
MEMO: Proceeds (net issuance costs, reserving)	0	0	0	0	0	0	0	0	0	0		
MEMO: Adjusted Gross Revenue Coverage	11.24	11.38	11.51	11.68	11.84	12.00	12.16	12.33	12.49	12.65		

Massachusetts Intermodal Transportation Trust Fund
Cash Flows (1993–2002)

FLAGS (0=off, 1=on)	
Congestion Pricing/Fare Increases	1
Registry Fee Increases	1

SCENARIO: (11) MITTF All Revenue (Varied Debt)

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(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Registry Sub–Fund												
Beginning Cash Balance	0	0	0	0	0	0	0	0	0	0		
Registry Fee Revenue	411	452	473	520	548	603	639	703	749	824	2,404	5,922
Debt Service	39	97	158	239	351	483	513	561	598	659	884	3,698
Annual Cash Surplus/(Deficit)	372	355	315	281	197	120	126	142	151	165		
Transfer Out to MITTF Cash Fund	372	355	315	281	197	120	126	142	151	165	1,520	2,224
Ending Cash Balance	0	0	0	0	0	0	0	0	0	0		
MEMO: Assumed New Debt Issued	475	710	738	957	1,333	1,560	345	575	438	712	4,213	7,842
MEMO: Proceeds (net issuance costs, reserving)	435	650	675	875	1218	1425	315	525	400	650	3,853	7,168
MEMO: Gross Revenue Coverage	10.64	4.66	2.99	2.18	1.56	1.25	1.25	1.25	1.25	1.25		
Toll Revenue Sub–Fund												
Beginning Cash Balance	0	0	0	0	0	0	0	0	0	0		
Congestion Pricing Surcharge (Net)	0	0	100	104	108	112	116	120	124	128	312	912
Turnpike Extension and C/S Tunnels Revenue	68	69	79	81	82	80	82	96	98	99	379	834
Total Revenue	68	69	179	185	190	192	198	216	222	227	691	1,746
Debt Service on Turnpike Debt	0	0	0	0	0	0	0	0	0	0	0	0
MITTF Debt Service	0	0	0	0	0	7	93	140	148	152	0	539
Total Expense	0	0	0	0	0	7	93	140	148	152	0	539
Annual Cash Surplus/(Deficit)	68	69	179	185	190	185	105	76	74	75		
Transfer Out to MITTF Cash Fund	68	69	179	185	190	185	105	76	74	75	691	1,207
Ending Cash Balance	0	0	0	0	0	0	0	0	0	0		
MEMO: Assumed New Debt Issued	0	0	0	0	0	82	1,013	558	93	44	0	1,790
MEMO: Proceeds (net issuance costs, reserving)	0	0	0	0	0	75	925	510	85	40	0	1,635
MEMO: Gross Revenue Coverage	N/A	N/A	N/A	N/A	N/A	27.62	2.14	1.54	1.50	1.50		
MITTF Consolidated Statement												
New Debt Issued	475	710	738	957	1,333	1,642	1,357	1,133	531	755	4,213	9,632
Proceeds	435	650	675	875	1,218	1,500	1,240	1,035	485	690	3,853	8,803
Debt Service	119	177	238	319	431	570	685	781	826	890	1,284	5,037
MITTF Cash Fund												
Beginning Balance	0	0	0	0	0	0	0	0	0	0		
Total Cash Transferred In	440	424	494	533	428	309	232	218	225	241	2,319	3,543
Cash Transfer to State	0	0	0	0	0	0	0	0	0	0	0	0
Cash Transfer to Capital Program	406	408	458	501	413	287	216	217	225	141	2,187	3,271
Cash Transfer to Operating Sub–Fund	34	16	36	32	15	22	16	1	0	100	133	272
Total Cash Transferred Out	440	424	494	533	428	309	232	218	225	241	2,319	3,543
Ending Balance	0	0	0	0	0	0	0	0	0	0		



Massachusetts Intermodal Transportation Trust Fund
Cash Flows (1993–2002)

FLAGS (0=off, 1=on)	
Congestion Pricing	0
Registry Fee Increase	0

SCENARIO: (12.1) MITA "Surgical Approach"

(Actual $ million, fiscal years)

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	58	161	188	170	148	150	150	150	150	150		
INCOME												
Taxes and Assessments:												
Motor Fuel Tax	540	545	550	556	562	568	574	580	586	592	2,753	5,653
Motor Vehicle Sales Tax	210	212	214	216	218	220	222	224	226	228	1,070	2,190
Registry Fees	411	425	416	431	422	437	428	443	435	450	2,105	4,298
Other (From Highway Fund)	15	16	17	18	19	20	21	22	23	24	85	195
Local Assessment	134	137	140	144	148	152	156	160	164	168	703	1,503
Operating Revenues:												
Congestion Pricing Surcharge (Net)	0	0	0	0	0	0	0	0	0	0	0	0
Transit Operations	190	225	236	294	308	324	340	357	375	394	1,253	3,043
Federal Operating Assistance	27	27	27	27	27	27	27	27	27	27	135	270
Turnpike (Extension and C/S Tunnels) Revenue	0	0	0	0	0	0	0	0	0	0	0	0
THT/Tobin Bridge (Net)	0	0	0	0	0	0	0	0	0	0	0	0
Interest Income	3	8	9	8	7	7	7	8	8	7	36	74
Total Income	1,530	1,595	1,609	1,694	1,711	1,755	1,775	1,821	1,844	1,890	8,140	17,226
EXPENSE												
Administration (MITA)	5	5	5	5	5	5	5	5	5	5	25	50
Operations:												
Transit	633	668	703	743	785	830	879	931	986	1,046	3,530	8,202
Highway	114	122	131	140	150	161	172	184	197	211	657	1,582
Registry	38	40	42	44	46	48	50	53	56	59	210	476
Public Safety	0	0	0	0	0	0	0	0	0	0	0	0
Operating Efficiencies	0	0	0	0	0	0	0	0	0	0	0	0
Pension and Other	96	101	106	111	117	123	129	135	142	149	531	1,209
Local Aid (Ch. 90)	41	41	41	42	42	43	43	44	44	44	206	424
Debt Service:												
MBTA Refundings	80	80	80	80	80	80	80	80	80	80	400	800
MHD Refundings	0	0	0	0	0	0	0	0	0	0	0	0
MassPike Refundings	0	0	0	0	0	0	0	0	0	0	0	0
New Debt Issues	20	64	119	202	295	295	295	295	295	295	700	2,175
Total Expense	1,027	1,119	1,227	1,367	1,520	1,585	1,653	1,727	1,805	1,889	6,259	14,918
Annual Cash Surplus/(Deficit)	503	476	382	328	191	171	122	94	39	1	1,881	2,308
Cash Transfer to State	0	0	0	0	0	0	0	0	0	0	0	0
Cash Transfer to Capital Program	400	450	400	350	189	171	122	94	39	1	1,789	2,216
Total Cash Transfer	400	450	400	350	189	171	122	94	39	1	1,789	2,216
Ending Cash Balance	161	188	170	148	150	150	150	150	150	150		
MEMO: Assumed New Debt Issued	244	536	663	993	1,095	0	0	0	0	0	3,532	3,532
MEMO: Proceeds (Net Issuance Costs, Reserving)	224	491	607	908	1000	0	0	0	0	0	3,230	3,230
MEMO: Adjusted Gross Revenue Coverage	12.72	8.99	6.51	4.68	3.53	3.60	3.60	3.67	3.67	3.74		

SCENARIO DESCRIPTION:

17–Jun–92 14:55

Massachusetts Turnpike Authority
Cash Flows (1993–2002)

SCENARIO: (12.2) Western Tolls Remain

(Actual $ million, fiscal years)

FLAGS (0=off, 1=on)	
Toll "phase out" (west of Rte. 495)	0
Start Year	1994

Lazard Freres toll increase

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	0	50	51	51	51	51	51	51	51	51		
REVENUE												
Third Harbor Tunnel	0	0	8	8	8	35	38	38	39	40	25	213
Tobin Bridge	12	12	16	16	16	24	24	25	25	26	72	195
Callahan/Sumner Tunnels	22	23	27	28	28	27	28	29	30	30	129	272
Turnpike	154	157	178	182	186	182	186	219	224	226	857	1,894
Interest	0	3	3	3	3	3	3	3	3	3	10	23
Total Income	189	195	232	236	241	270	276	314	321	325	1,092	2,598
EXPENSE												
Central Artery	0	0	0	0	42	44	46	49	51	54	42	286
Third Harbor Tunnel	0	0	10	11	11	12	12	13	14	14	32	97
Tobin Bridge	6	6	7	7	7	8	8	8	9	9	33	75
Callahan/Sumner Tunnels	9	10	10	11	12	12	13	13	14	15	52	119
Turnpike	60	63	66	69	73	77	80	84	89	93	331	754
Subtotal Operating Expenses	75	79	93	98	145	152	160	168	176	185	491	1,332
Existing Debt Service	20	20	20	20	20	20	20	20	20	20	100	200
New Debt Service	24	24	27	27	27	36	36	50	50	50	129	351
Total Expense	119	123	140	145	192	208	216	238	248	255	720	1,883
Annual Cash Surplus/(Deficit)	69	71	91	91	49	62	60	76	75	70	372	715
Cash Transfer to Capital Account	19	71	91	91	49	62	60	76	75	70	321	664
Ending Cash Balance	50	51	51	51	51	51	51	51	51	51		
MEMO: Assumed New Debt Issued	300	0	27	0	0	109	0	164	0	0	327	601
MEMO: Proceeds (Net Issuance Costs, Reserving)	275	0	25	0	0	100	0	150	0	0	300	550
MEMO: Net Revenue Coverage	2.57	2.62	2.94	2.94	2.05	2.10	2.07	2.09	2.06	2.00		

Capital Requirements Summary												
High to Causeway, Dewey Sq. Tunnel	34	58	108	149	167	240	386	171	0	0	517	1,315
Mass. Ave. Interchange	11	35	61	101	39	0	0	0	0	0	248	248
Leverett Circle	0	0	2	3	5	7	13	6	0	0	10	35
Turnpike Recapitalization	62	64	67	69	71	74	76	79	82	85	333	729
Tobin Bridge Purchase/Recapitalization	35	0	0	0	0	0	0	0	0	0	35	35
TOTAL	142	158	237	322	283	321	475	256	82	85	1,143	2,361

SCENARIO DESCRIPTION:

Massachusetts Turnpike Authority
Cash Flows (1993–2002)

SCENARIO: (12.2) Western Tolls Remain

(Actual $ million, fiscal years)

FLAGS (0=off, 1=on)	
Toll "phase out" (west of Rte. 495)	0
Start Year	1994

"Three times" toll increases

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	0	50	50	49	49	49	49	49	49	50		
REVENUE												
Third Harbor Tunnel	0	0	8	8	8	35	36	38	39	40	25	213
Tobin Bridge	12	12	16	16	16	24	24	25	25	26	72	195
Callahan/Sumner Tunnels	22	23	27	28	28	27	28	29	30	30	129	272
Turnpike	175	177	254	259	264	297	303	323	329	332	1,129	2,714
Interest	0	2	2	2	2	2	2	2	2	2	10	22
Total Income	209	215	307	313	319	386	393	417	426	431	1,364	3,417
EXPENSE												
Central Artery	0	0	0	0	42	44	46	49	51	54	42	286
Third Harbor Tunnel	0	0	10	11	11	12	12	13	14	14	32	97
Tobin Bridge	6	6	7	7	7	8	8	8	9	9	33	75
Callahan/Sumner Tunnels	9	10	10	11	12	12	13	13	14	15	52	119
Turnpike	60	63	66	69	73	77	80	84	89	93	331	754
Subtotal Operating Expenses	75	79	93	98	145	152	160	168	176	185	491	1,332
Existing Debt Service	20	20	20	20	20	20	20	20	20	20	100	200
New Debt Service	27	27	63	63	63	91	91	102	102	102	243	731
Total Expense	122	126	176	181	228	263	271	290	298	307	834	2,263
Annual Cash Surplus/(Deficit)	87	89	131	132	92	122	123	127	127	124	530	1,153
Cash Transfer to Capital Account	37	89	131	132	92	122	123	127	127	124	481	1,104
Ending Cash Balance	50	50	49	49	49	49	49	49	50	49		
MEMO: Assumed New Debt Issued	327	0	437	0	0	328	0	137	0	0	765	1,230
MEMO: Proceeds (Net Issuance Costs, Reserving)	300	0	400	0	0	300	0	125	0	0	700	1,125
MEMO: Net Revenue Coverage	2.84	2.89	2.57	2.59	2.10	2.10	2.10	2.04	2.04	2.02		

Capital Requirements Summary												
High to Causeway, Dewey Sq. Tunnel	34	58	108	149	167	240	386	171	0	0	517	1,315
Mass. Ave. Interchange	11	35	61	101	39	0	0	0	0	0	248	248
Leverett Circle	0	0	2	3	5	7	13	6	0	0	10	35
Turnpike Recapitalization	62	64	67	69	71	74	76	79	82	85	333	729
Tobin Bridge Purchase/Recapitalization	35	0	0	0	0	0	0	0	0	0	35	35
TOTAL	142	158	237	322	283	321	475	256	82	85	1,143	2,361

SCENARIO DESCRIPTION:



Massachusetts Turnpike Authority
Cash Flows (1993–2002)

SCENARIO: (12.3) Western Tolls Eliminated (1994)

(Actual $ million, fiscal years)

FLAGS (0=off, 1=on)	
Toll "phase out" (west of Rte. 495)	1
Start Year	1994

Lazard Freres toll increase

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	0	50	51	50	50	49	49	49	49	49		
REVENUE												
Third Harbor Tunnel	0	0	8	8	8	35	36	38	39	40	25	213
Tobin Bridge	12	12	16	16	16	24	24	25	25	26	72	195
Callahan/Sumner Tunnels	22	23	27	28	28	27	28	29	30	30	129	272
Turnpike	154	89	102	104	106	104	106	125	128	129	555	1,146
Interest	0	3	3	3	3	2	2	2	2	2	10	22
Total Income	189	127	155	158	161	192	196	220	224	228	790	1,849
EXPENSE												
Central Artery	0	0	0	0	42	44	46	49	51	54	42	286
Third Harbor Tunnel	0	0	10	11	11	12	12	13	14	14	32	97
Tobin Bridge	6	6	7	7	7	8	8	8	9	9	33	75
Callahan/Sumner Tunnels	9	10	10	11	12	12	13	13	14	15	52	119
Turnpike	60	47	49	51	54	57	59	62	66	69	261	574
Subtotal Operating Expenses	75	63	76	80	126	132	139	146	153	161	421	1,152
Existing Debt Service	20	20	20	20	20	20	20	20	20	20	100	200
New Debt Service	0	0	0	0	0	7	7	14	14	14	0	56
Total Expense	95	83	96	100	146	159	166	180	187	195	521	1,408
Annual Cash Surplus/(Deficit)	93	44	59	58	15	33	30	40	37	33	269	442
Cash Transfer to Capital Account	43	44	59	58	16	33	30	40	37	33	220	393
Ending Cash Balance	50	51	50	50	49	49	49	49	49	49		
MEMO: Assumed New Debt Issued	0	0	0	0	0	82	0	82	0	0	0	164
MEMO: Proceeds (Net Issuance Costs, Reserving)	0	0	0	0	0	75	0	75	0	0	0	150
MEMO: Net Revenue Coverage	5.66	3.22	3.93	3.90	1.76	2.20	2.10	2.18	2.09	1.96		

Capital Requirements Summary												
High to Causeway, Dewey Sq. Tunnel	34	58	108	149	167	240	386	171	0	0	517	1,315
Mass. Ave. Interchange	11	35	61	101	39	0	0	0	0	0	248	248
Leverett Circle	0	0	2	3	5	7	13	6	0	0	10	35
Turnpike Recapitalization	62	48	49	51	53	55	56	58	61	63	263	555
Tobin Bridge Purchase/Recapitalization	35	0	0	0	0	0	0	0	0	0	35	35
TOTAL	142	141	220	305	264	302	456	235	61	63	1,072	2,188

SCENARIO DESCRIPTION:

Massachusetts Turnpike Authority
Cash Flows (1993–2002)

SCENARIO: (12.3) Western Tolls Eliminated (1994)

(Actual $ million, fiscal years)

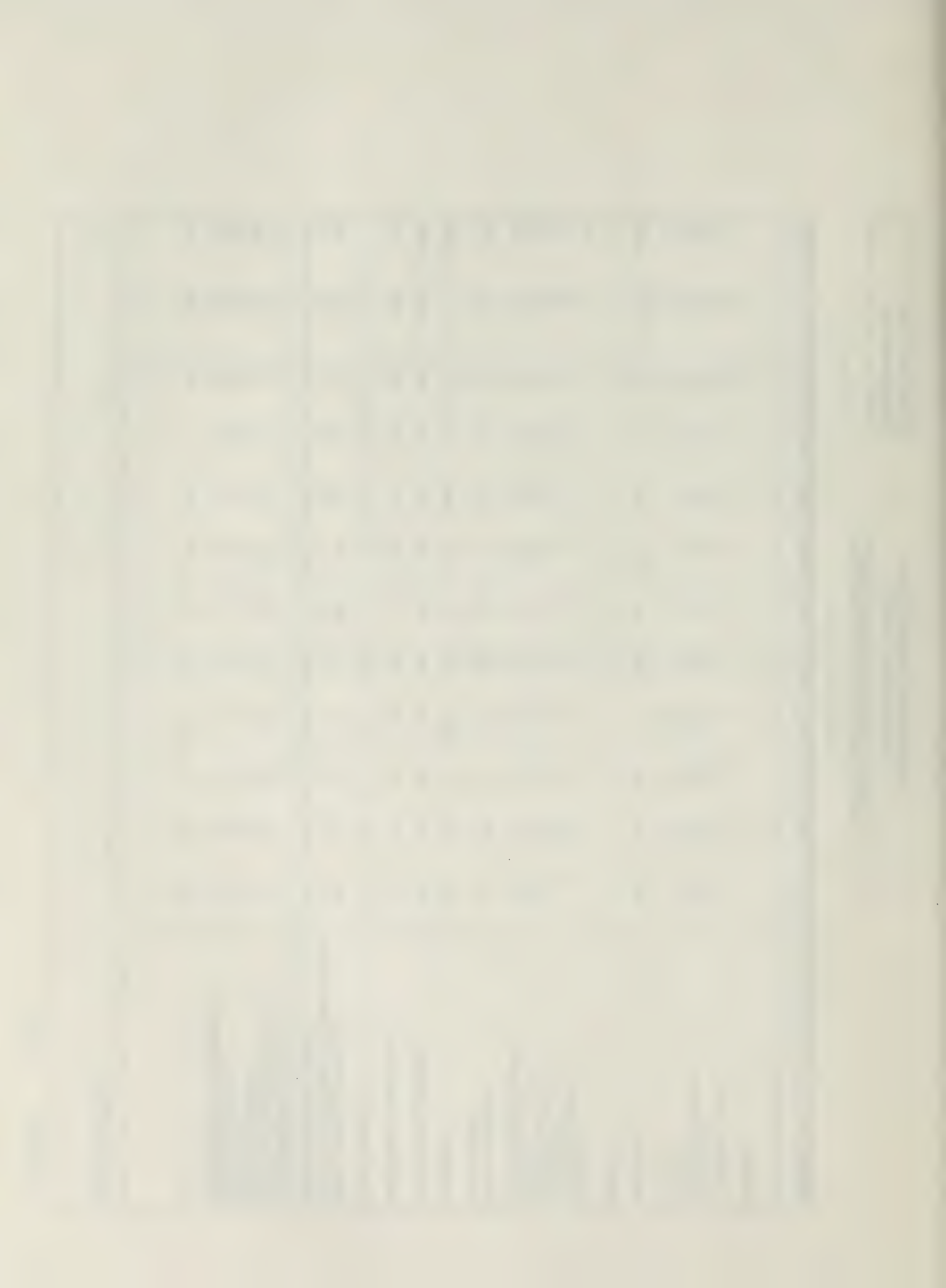
FLAGS (0=off, 1=on)	
Toll "phase out" (west of Rte. 495)	1
Start Year	1994

"Three times" toll increase

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	0	50	50	49	49	49	49	49	49	49		
REVENUE												
Third Harbor Tunnel	0	0	8	8	8	35	36	38	39	40	25	213
Tobin Bridge	12	12	16	16	16	24	24	25	25	26	72	195
Callahan/Sumner Tunnels	22	23	27	28	28	27	28	29	30	30	129	272
Turnpike	175	101	145	148	151	170	173	184	188	189	719	1,622
Interest	0	2	2	2	2	2	2	2	2	2	10	22
Total Income	209	139	198	202	206	258	263	279	284	288	953	2,325
EXPENSE												
Central Artery	0	0	0	0	42	44	46	49	51	54	42	286
Third Harbor Tunnel	0	0	10	11	11	12	12	13	14	14	32	97
Tobin Bridge	6	6	7	7	7	8	8	8	9	9	33	75
Callahan/Sumner Tunnels	9	10	10	11	12	12	13	13	14	15	52	119
Turnpike	60	47	49	51	54	57	59	62	66	69	261	574
Subtotal Operating Expenses	75	63	76	80	126	132	139	146	153	161	421	1,152
Existing Debt Service	20	20	20	20	20	20	20	20	20	20	100	200
New Debt Service	18	18	20	20	20	41	41	43	43	43	96	307
Total Expense	113	101	116	120	166	193	200	209	216	224	617	1,659
Annual Cash Surplus/(Deficit)	96	38	82	82	40	64	63	70	68	64	337	666
Cash Transfer to Capital Account	46	38	82	82	40	64	63	70	68	64	288	617
Ending Cash Balance	50	50	49	49	49	49	49	49	49	49		
MEMO: Assumed New Debt Issued	218	0	27	0	0	246	0	27	0	0	246	519
MEMO: Proceeds (Net Issuance Costs, Reserving)	200	0	25	0	0	225	0	25	0	0	225	475
MEMO: Net Revenue Coverage	3.51	2.00	3.04	3.04	2.00	2.06	2.03	2.11	2.08	2.02		

Capital Requirements Summary												
High to Causeway, Dewey Sq. Tunnel	34	58	108	149	167	240	386	171	0	0	517	1,315
Mass. Ave. Interchange	11	35	61	101	39	0	0	0	0	0	248	248
Leverett Circle	0	0	2	3	5	7	13	6	0	0	10	35
Turnpike Recapitalization	62	48	49	51	53	55	56	58	61	63	263	555
Tobin Bridge Purchase/Recapitalization	35	0	0	0	0	0	0	0	0	0	35	35
TOTAL	142	141	220	305	264	302	456	235	61	63	1,072	2,188

SCENARIO DESCRIPTION:



Massachusetts Turnpike Authority
Cash Flows (1993–2002)

SCENARIO: (12.4) Western Tolls Eliminated (2000)

FLAGS (0=off, 1=on)	
Toll "phase out" (west of Rte. 495)	1
Start Year	2000

(Actual $ million, fiscal years)

FISCAL YEARS:	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	0	29	8	(70)	(150)	(231)	(349)	(470)	(531)	(593)		
REVENUE												
Third Harbor Tunnel	0	0	8	8	8	35	36	38	39	40	25	213
Tobin Bridge	12	12	16	16	16	24	24	25	25	26	72	195
Callahan/Sumner Tunnels	22	23	27	28	28	27	28	29	30	30	129	272
Turnpike	154	157	178	182	186	182	186	125	128	129	857	1,606
Interest	0	1	0	0	0	0	0	0	0	0	2	2
Total Income	189	194	229	234	239	268	273	217	222	225	1,084	2,289
EXPENSE												
Central Artery	0	0	0	0	42	44	46	49	51	54	42	286
Third Harbor Tunnel	0	0	10	11	11	12	12	13	14	14	32	97
Tobin Bridge	6	6	7	7	7	8	8	8	9	9	33	75
Callahan/Sumner Tunnels	9	10	10	11	12	12	13	13	14	15	52	119
Turnpike	60	63	66	69	73	77	80	62	66	69	331	685
Subtotal Operating Expenses	75	79	93	98	145	152	160	146	153	161	491	1,263
Existing Debt Service	20	20	20	20	20	20	20	20	20	20	100	200
New Debt Service	27	27	43	43	43	43	43	43	43	43	183	398
Total Expense	122	126	156	161	208	215	223	209	216	224	774	1,861
Annual Cash Surplus/(Deficit)	66	67	73	73	31	52	50	9	6	1	310	428
Cash Transfer to Capital Account	37	89	151	152	112	170	171	70	68	64	541	1,084
Ending Cash Balance	29	8	(70)	(150)	(231)	(349)	(470)	(531)	(593)	(656)		
MEMO: Assumed New Debt Issued	327	0	191	0	0	0	0	0	0	0	519	519
MEMO: Proceeds (Net Issuance Costs, Reserving)	300	0	175	0	0	0	0	0	0	0	475	475
MEMO: Net Revenue Coverage	2.41	2.43	2.16	2.15	1.49	1.83	1.80	1.14	1.09	1.02		

Capital Requirements Summary												
High to Causeway, Dewey Sq. Tunnel	34	58	108	149	167	240	386	171	0	0	517	1,315
Mass. Ave. Interchange	11	35	61	101	39	0	0	0	0	0	248	248
Leverett Circle	0	0	2	3	5	7	13	6	0	0	10	35
Turnpike Recapitalization	62	64	67	69	71	74	76	58	61	63	333	665
Tobin Bridge Purchase/Recapitalization	35	0	0	0	0	0	0	0	0	0	35	35
TOTAL	142	158	237	322	283	321	475	235	61	63	1,143	2,297

SCENARIO DESCRIPTION:

Massachusetts Turnpike Authority
Cash Flows (1993–2002)

SCENARIO: (12.5) Status Quo Scenario

(Actual $ million, fiscal years)

FLAGS (0=off, 1=on)	
Toll "phase out" (west of Rte. 495)	0
Start Year	1994

Tolls remain at present levels

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	0	50	50	50	50	49	49	49	49	49		
REVENUE												
Third Harbor Tunnel	0	0	8	9	9	12	12	13	14	14	26	91
Tobin Bridge	6	12	13	13	13	14	14	14	15	15	57	129
Callahan/Sumner Tunnels	17	18	19	20	21	22	23	24	25	27	95	216
Turnpike	138	145	152	160	168	176	185	194	204	214	762	1,734
Interest	0	2	3	2	2	2	2	2	2	2	10	22
Total Income	161	178	194	204	214	226	237	248	260	273	950	2,194
EXPENSE												
Central Artery	0	0	0	0	42	44	46	49	51	54	42	286
Third Harbor Tunnel	0	0	10	11	11	12	12	13	14	14	32	97
Tobin Bridge	6	6	7	7	7	8	8	8	9	9	33	75
Callahan/Sumner Tunnels	9	10	10	11	12	12	13	13	14	15	52	119
Turnpike	60	63	66	69	73	77	80	84	89	93	331	754
Subtotal Operating Expenses	75	79	93	98	145	152	160	168	176	185	491	1,332
Existing Debt Service	20	20	20	20	20	20	20	20	20	20	100	200
New Debt Service	13	13	13	13	13	16	16	20	20	23	65	160
Total Expense	108	112	126	131	178	188	196	208	216	228	656	1,692
Annual Cash Surplus/(Deficit)	53	65	68	73	36	38	41	40	44	45	294	502
Cash Transfer to Capital Account	3	65	68	73	36	38	41	40	44	45	245	453
Ending Cash Balance	50	50	50	50	49	49	49	49	49	49		
MEMO: Assumed New Debt Issued	164	0	0	0	0	27	0	55	0	27	164	273
MEMO: Proceeds (Net Issuance Costs, Reserving)	150	0	0	0	0	25	0	50	0	25	150	250
MEMO: Net Revenue Coverage	2.59	2.98	3.06	3.20	2.08	2.05	2.14	2.01	2.10	2.04		

Capital Requirements Summary												
High to Causeway, Dewey Sq. Tunnel	34	58	108	149	167	240	386	171	0	0	517	1,315
Mass. Ave. Interchange	11	35	61	101	39	0	0	0	0	0	248	248
Leverett Circle	0	0	2	3	5	7	13	6	0	0	10	35
Turnpike Recapitalization	62	64	67	69	71	74	76	79	82	85	333	729
Tobin Bridge Purchase/Recapitalization	35	0	0	0	0	0	0	0	0	0	35	35
TOTAL	142	158	237	322	283	321	475	256	82	85	1,143	2,361

SCENARIO DESCRIPTION:

Massachusetts Turnpike Authority
Cash Flows (1993–2002)

SCENARIO: (12.5) Status Quo Scenario

(Actual $ million, fiscal years)

FLAGS (0=off, 1=on)	
Toll 'phase out' (west of Rte. 495)	1
Start Year	1994

Tolls remain at present levels

FISCAL YEARS	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	5 YR CUM	10 YR CUM
Beginning Cash Balance	0	66	99	134	150	151	151	151	151	152		
REVENUE												
Third Harbor Tunnel	0	0	8	9	9	12	12	13	14	14	26	91
Tobin Bridge	6	12	13	13	13	14	14	14	15	15	57	129
Callahan/Sumner Tunnels	17	18	19	20	21	22	23	24	25	27	95	216
Turnpike	138	83	87	91	96	100	105	111	116	122	494	1,048
Interest	0	3	5	7	8	8	8	8	8	8	22	60
Total Income	161	116	131	139	146	155	162	170	178	186	694	1,545
EXPENSE												
Central Artery	0	0	0	0	42	44	46	49	51	54	42	286
Third Harbor Tunnel	0	0	10	11	11	12	12	13	14	14	32	97
Tobin Bridge	6	6	7	7	7	8	8	8	9	9	33	75
Callahan/Sumner Tunnels	9	10	10	11	12	12	13	13	14	15	52	119
Turnpike	60	47	49	51	54	57	59	62	66	69	261	574
Subtotal Operating Expenses	75	63	76	80	126	132	139	146	153	161	421	1,152
Existing Debt Service	20	20	20	20	20	20	20	20	20	20	100	200
New Debt Service	0	0	0	0	0	0	0	0	0	0	0	0
Total Expense	95	83	96	100	146	152	159	166	173	181	521	1,352
Annual Cash Surplus/(Deficit)	66	33	35	39	0	3	3	4	4	5	174	194
Cash Transfer to Capital Account	0	0	0	23	0	3	3	4	4	5	23	42
Ending Cash Balance	66	99	134	150	151	151	151	151	152	152		
MEMO: Assumed New Debt Issued	0	0	0	0	0	0	0	0	0	0	0	0
MEMO: Proceeds (Net Issuance Costs, Reserving)	0	0	0	0	0	0	0	0	0	0	0	0
MEMO: Net Revenue Coverage	4.28	2.67	2.76	2.96	1.02	1.15	1.17	1.20	1.22	1.25		

Capital Requirements Summary												
High to Causeway, Dewey Sq. Tunnel	34	58	108	149	167	240	386	171	0	0	517	1,315
Mass. Ave. Interchange	11	35	61	101	39	0	0	0	0	0	248	248
Leverett Circle	0	0	2	3	5	7	13	6	0	0	10	35
Turnpike Recapitalization	62	48	49	51	53	55	56	58	61	63	263	555
Tobin Bridge Purchase/Recapitalization	35	0	0	0	0	0	0	0	0	0	35	35
TOTAL	142	141	220	305	264	302	456	235	61	63	1,072	2,188

SCENARIO DESCRIPTION:

Massachusetts Transportation Capital Needs Vs. Resources

17-Jun-92 14:55

Nominal $ (Millions)	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	5 Year Cum	10 Year Cum
NET STATE CAPITAL REQUIREMENTS:												
MBTA (less Federal Section 3, 9, 23)	436	633	723	844	1,015	1,009	888	823	886	918	3,651	8,175
CA/T (less ISTEA IC Funds)	164	257	259	510	615	1,060	612	249	50	0	1,804	3,776
Other MHD	608	591	603	623	645	667	691	715	740	766	3,070	6,649
Turnpike Extension and C/S Tunnels	21	22	23	24	24	25	26	27	14	15	114	222
EOTC/MAC/Rail/RTAs	33	25	37	26	39	28	41	30	44	32	159	335
Total Need	1,261	1,529	1,644	2,027	2,338	2,790	2,259	1,844	1,735	1,731	8,799	19,157
Other ISTEA Funds Available (Non-IC)	480	370	340	380	400	0	0	0	0	0	1,970	1,970
New Federal Funding												
1987 Bill (Restored Obligation Authority)	30	30	30	30	30	0	0	0	0	0	150	150
1997 Bill (post-ISTEA)												
IC Funds	0	0	0	0	0	487	288	80	0	0	0	855
Non-IC Funds	0	0	0	0	0	400	400	400	400	400	0	2,000
Net Remaining Need	751	1,129	1,274	1,617	1,908	1,902	1,571	1,365	1,335	1,331	6,679	14,183
ADDITIONAL RESOURCES:												
MITTF Impacts												
Capital Planning Efficiencies	62	73	75	82	95	94	89	83	84	87	387	824
MassPike Capital Contribution	0	0	0	0	0	0	0	0	0	0	0	0
MassPort Capital Contribution	41	43	32	29	30	11	10	10	10	11	174	226
Transfers from Cash	473	463	452	500	500	349	248	190	96	18	2,388	3,289
Proceeds of New MITTF Debt	175	350	615	700	700	700	700	700	700	700	2,540	6,040
Total Additional Resources	751	929	1,174	1,311	1,325	1,154	1,047	983	890	815	5,489	10,379
FUNDING SURPLUS/(SHORTFALL)	(0)	(200)	(100)	(306)	(583)	(749)	(524)	(381)	(445)	(515)	(1,190)	(3,804)

MITTF Scenario Number **10** Registry Fee Increases Only

Sources: MBTA, CA/T, and MHD Capital Planning Models; MITTF Debt Capacity Model
Models developed by Deloitte & Touche from data and assumptions provided by EOTC, MBTA, CA/T project team, and MHD.

Massachusetts Transportation Capital Needs Vs. Resources

Scenario 12.1 "Surgical Approach"

17-Jun-92 14:55

Nominal $ (Millions)	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	5 Year Cum	10 Year Cum
NET STATE CAPITAL REQUIREMENTS:												
MBTA (less Federal Section 3, 9, 23)	436	633	723	844	1,015	1,009	888	823	886	918	3,651	8,175
CA/T (less ISTEA IC Funds)	164	257	259	510	615	1,060	612	249	50	0	1,804	3,776
Other MHD	608	591	603	623	645	667	691	715	740	766	3,070	6,649
Turnpike Extension and C/S Tunnels	0	0	0	0	0	0	0	0	0	0	0	0
EOTC/MAC/Rail/RTAs	33	25	37	26	39	28	41	30	44	32	159	335
Total Need	1,240	1,507	1,621	2,003	2,314	2,764	2,233	1,817	1,721	1,716	8,684	18,936
Other ISTEA Funds Available (Non-IC)	480	370	340	380	400	0	0	0	0	0	1,970	1,970
New Federal Funding												
1987 Bill (Restored Obligation Authority)	30	30	30	30	30	0	0	0	0	0	150	150
1997 Bill (post-ISTEA)												
IC Funds	0	0	0	0	0	487	288	80	0	0	0	855
Non-IC Funds	0	0	0	0	0	400	400	400	400	400	0	2,000
Net Remaining Need	730	1,107	1,251	1,593	1,884	1,877	1,545	1,337	1,321	1,316	6,564	13,961
ADDITIONAL RESOURCES:												
MITA Impacts												
Capital Planning Efficiencies	60	72	74	81	94	93	88	82	83	86	381	813
MassPike Capital Contribution	303	3	403	3	2	302	2	127	2	2	713	1,148
MassPort Capital Contribution	0	0	0	0	0	0	0	0	0	0	0	0
Transfers from Cash	400	450	400	350	189	171	122	94	39	1	1,789	2,216
Proceeds of New MITA Debt	224	491	607	908	1,000	0	0	0	0	0	3,230	3,230
Total Additional Resources	987	1,016	1,483	1,342	1,285	566	212	303	124	89	6,113	7,407
FUNDING SURPLUS/(SHORTFALL)	258	(91)	232	(251)	(599)	(1,311)	(1,333)	(1,034)	(1,197)	(1,227)	(452)	(6,554)

Sources: MBTA, CA/T, and MHD Capital Planning Models; MITTF Debt Capacity Model

Models developed by Deloitte & Touche from data and assumptions provided by EOTC, MBTA, CA/T project team, and MHD.

Massachusetts Transportation Capital Needs

Nominal $ (Millions)	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	5 Year Cum	10 Year Cum
MBTA Capital Spending (Note 1)													
Base Spending	362.9	601.6	843.6	870.7	1,000.8	1,231.2	1,188.1	1,072.4	923.8	921.4	952.7	4,547.9	9,606.3
Federal Funding (Sections 3, 9, 23)	109.4	165.7	210.3	147.9	156.9	216.0	179.2	184.0	101.1	35.0	35.0	896.8	1,431.0
Non–IC Funding (Note 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net State Requirement	253.5	435.9	633.3	722.8	843.9	1,015.2	1,008.9	888.4	822.7	886.4	917.7	3,651.1	8,175.2
CA/T Capital Spending (Note 3)													
Proposed Action Modified for 8.1.D.	414.4	916.9	804.6	570.1	945.3	1,127.7	955.4	531.2	193.2	50.3	0.0	4,364.6	6,094.7
8.1.D.	0.0	9.2	9.5	47.1	73.1	100.8	104.4	81.0	56.0	0.0	0.0	239.8	481.2
Subtotal CA/T Cost	414.4	926.1	814.1	617.2	1,018.4	1,228.5	1,059.7	612.2	249.1	50.3	0.0	4,604.4	6,575.8
1987 Bill (Obligated, not spent)	300.0	300.0	150.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	500.0	500.0
ISTEA IC Funding (Note 4)	0.0	462.6	406.7	308.3	508.7	613.7	0.0	0.0	0.0	0.0	0.0	2,300.0	2,300.0
Non–IC Funding (Note 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net State Requirement	114.4	163.5	257.5	258.9	509.7	614.9	1,059.7	612.2	249.1	50.3	0.0	1,804.4	3,775.8
MHD Capital Spending (Note 5)													
Base Spending	520.9	607.5	591.3	603.1	623.1	644.9	667.5	690.8	715.0	740.1	766.0	3,070.0	6,649.4
Non–IC Funding (Note 2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net State Requirement	520.9	607.5	591.3	603.1	623.1	644.9	667.5	690.8	715.0	740.1	766.0	3,070.0	6,649.4
EOTC/MAC/Rail/RTAs Capital Spending													
Base Spending	22.6	32.6	24.6	36.6	26.4	38.6	28.3	41.3	30.3	44.3	32.4	158.8	335.5
Federal Funding	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net State Requirement	22.6	32.6	24.6	36.6	26.4	38.6	28.3	41.3	30.3	44.3	32.4	158.8	335.5
TOTAL Base Capital Spending	1,320.8	2,167.9	2,273.7	2,127.7	2,668.7	3,143.2	2,943.6	2,416.8	1,918.3	1,756.0	1,751.1	12,381.2	23,167.0
Subtotal Federal Transit Funds	109.4	165.7	210.3	147.9	156.9	216.0	179.2	184.0	101.1	35.0	35.0	896.8	1,431.0
Subtotal Federal IC Funds	0.0	462.6	406.7	308.3	508.7	613.7	0.0	0.0	0.0	0.0	0.0	2,300.0	2,300.0
Subtotal Federal Non–IC Funds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL Federal Funds Available	109.4	628.3	617.0	456.2	665.6	829.6	179.2	184.0	101.1	35.0	35.0	3,196.8	3,731.0
TOTAL State Capital Requirement	1,211.4	1,539.6	1,656.7	1,671.5	2,003.1	2,313.6	2,764.4	2,232.8	1,817.2	1,721.0	1,716.1	9,184.4	19,435.9
Federal Share of TOTAL Base	8%	29%	27%	21%	25%	26%	6%	8%	5%	2%	2%	26%	16%
State Share of TOTAL Base	92%	71%	73%	79%	75%	74%	94%	92%	95%	98%	98%	74%	84%
MEMO: MTA "Critical Needs" (Note 6)	64.7	67.0	69.3	71.8	74.3	76.9	79.6	82.4	42.6	44.1	45.7	359.3	653.6

Highway Fund Model

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Nominal $	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
Highway Fund Gross Yearly Revenue	1,048	1,071	1,095	1,119	1,144	1,169	1,194	1,221	1,248	1,275
Operating Expenses:										
MHD/EOTC/MAC/Registry	152	163	174	186	199	213	228	244	261	279
MBTA/RTAs (State Share of NCOS, RR Asst)	376	399	423	448	475	503	534	566	600	636
SUBTOTAL	528	561	597	634	674	717	762	810	861	915
Capital Expenses:										
MHD Long Term Debt Service										
Existing	214	209	202	199	177	176	185	170	173	169
New (incl. CA/T, EOTC, MAC, Rail)	34	87	144	225	316	404	463	506	538	565
MBTA Debt Service Contract Assistance										
Existing	156	152	150	149	147	145	144	142	141	138
New (incl. RTAs)	53	123	201	290	395	496	579	654	734	815
SUBTOTAL	457	572	696	863	1,036	1,221	1,372	1,471	1,586	1,687
Total Expenses	986	1,133	1,293	1,497	1,710	1,937	2,133	2,281	2,447	2,603
Net Annual Surplus/(Deficit)	63	(62)	(198)	(378)	(566)	(769)	(939)	(1,060)	(1,199)	(1,328)
Cumulative Surplus/(Deficit)	63	1	(198)	(576)	(1,142)	(1,911)	(2,850)	(3,910)	(5,109)	(6,437)
Capital Requirements Summary*										
MHD Need for State Capital (incl. CA/T, Other)	281	461	515	735	854	853	641	499	418	381
MBTA/RTAs Need for State Capital	448	646	736	858	1,029	1,024	904	839	903	935
Total Need	730	1,107	1,251	1,593	1,884	1,877	1,545	1,337	1,321	1,316
*Assumes all Non-IC Funding goes to MHD and CA/T										

Highway Fund Model

17-Jun-92 15:26

Nominal $		FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
MHD Debt Service Computation											
Principal Beginning Balance		281	731	1,216	1,901	2,676	3,415	3,909	4,234	4,459	4,630
Total Interest Payments		20	53	88	138	194	248	283	307	323	336
Issuance Costs		3	5	5	7	9	9	6	5	4	4
		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Issue Year Parameters:											
Term		25	25	25	25	25	25	25	25	25	25
Principal		281	461	515	735	854	853	641	499	418	381
Principal Payment		11	18	21	29	34	34	26	20	17	15
Issue Year:											
	1993	11	11	11	11	11	11	11	11	11	11
	1994		18	18	18	18	18	18	18	18	18
	1995			21	21	21	21	21	21	21	21
	1996				29	29	29	29	29	29	29
	1997					34	34	34	34	34	34
	1998						34	34	34	34	34
	1999							26	26	26	26
	2000								20	20	20
	2001									17	17
	2002										15
TOTAL PRINCIPAL PAYMENTS		11	30	50	80	114	148	174	194	210	226
Principal Ending Balance		270	701	1,166	1,822	2,562	3,267	3,735	4,040	4,248	4,404
TOTAL MHD DEBT SERVICE/CHARGES		34	87	144	225	316	404	463	506	538	565
MBTA Debt Service Computation											
Principal Beginning Balance		448	1,077	1,769	2,553	3,475	4,350	5,064	5,677	6,320	6,959
Total Interest Payments		30	73	120	174	236	296	344	386	430	473
Issuance Costs		4	6	7	9	10	10	9	8	9	9
		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Issue Year Parameters:											
Term		25	25	25	25	25	25	25	25	25	25
Principal		448	646	736	858	1,029	1,024	904	839	903	935
Principal Payment		18	26	29	34	41	41	36	34	36	37
Issue Year:											
	1993	18	18	18	18	18	18	18	18	18	18
	1994		26	26	26	26	26	26	26	26	26
	1995			29	29	29	29	29	29	29	29
	1996				34	34	34	34	34	34	34
	1997					41	41	41	41	41	41
	1998						41	41	41	41	41
	1999							36	36	36	36
	2000								34	34	34
	2001									36	36
	2002										37
TOTAL PRINCIPAL PAYMENTS		18	44	73	108	149	190	226	259	295	333
Principal Ending Balance		430	1,033	1,696	2,446	3,327	4,161	4,838	5,418	6,025	6,627
TOTAL MBTA DEBT SERVICE/CHARGES		53	123	201	290	395	496	579	654	734	815

McDermott, Will & Emery
1850 K Street, N.W.
Suite 500
Washington, D.C. 20006

M E M O R A N D U M

TO: Robert Baum, EOTC **DATE:** May 20, 1992

FROM: Roger Feldman

RE: New Federal Assistance Programs Relevant to Current Issues

==========

Background

EOTC is considering the interrelationships among three concepts:

(i) Creation of the Massachusetts Intermodal Transportation Trust Fund (MITTF), funded with special obligation debt secured by a group of dedicated revenue sources;

(ii) Definition of the continued institutional role of the Massachusetts Turnpike Authority, its future bond issuance powers, and the application of its toll revenues; and

(iii) Development of a comprehensive finance plan for the Central Artery Tunnel, taking into account concepts (i) and (ii).

There is a fourth factor to be taken into account, which, properly used, may serve to knit together the first three: the availability, for the first time, of federal support for tolled highway, tunnel and bridge projects under 23 U.S.C. § 129, as amended by § 1012 of ISTEA. (A copy of § 129 is attached.)

Applicable ISTEA Provisions.

- Under amended Section 129, Federal grants are authorized for up to 80% of the cost of a toll bridge or tunnel, or up to 50% for toll highways, subject to the following conditions:

- The project involves either initial construction, reconstruction and conversion to tolls, or 4R work (as defined in the statute).

- The developer may be a public entity -- including a public authority designated by the state transportation department--or a private entity.

- Pursuant to a federal-state agreement, toll revenues from a federally-assisted project must be applied in the first instance to debt repayment, O&M and necessary 4R work. (Where there is private equity investment, revenues can also be applied to a reasonable return on investment.)

- Excess toll revenues are available to the state for application to any highway, bridge or tunnel project for which federal funds might be obligated.

- In lieu of grants to public authorities for toll projects, federal funds may be funneled through the state as a subordinated loan to a public authority. Commencement of debt service payments may be deferred for a five year period after completion of the toll facility.

- The proceeds of repayment of such loans (including interest) may be reloaned by the state to other transportation projects. Federal rules applicable to original grants or loans are not applicable to recycled funds.

  - The potential for a state "revolving fund" is thus created. In effect, moneys originating in federal grants can become an ongoing source of financing.

  - The impact of these funds can be amplified through various financial techniques. For example, if loans from the revolving fund are confined to the construction period, the funding of new projects can be accelerated, as repaid construction loan funds are recirculated to finance additional projects.

  - Alternatively, once a revolving fund portfolio of permanent loans is established, the funds for new projects can be generated through securitization of the loan portfolio.

- Federal funds which have been contractually obligated for toll projects (whether as grants or loans) are not

available for other state projects. While short term state flexibility in application of federal funds is thus reduced, this adverse effect is balanced by reduced state expenditure requirements on the projects to which federal grants are applied.

  - "Public authority" match of the federal grant (20% to 50% of total project cost) will count toward the amount the state is required to commit to take down its authorized federal allocation. State funds are thus freed up for other purposes.

  - FHWA operates under statutory guidelines as to what constitutes a state "match". In general, contributions of newly purchased right of way, as well as cash, count toward the state obligation. (Paper transactions involving transfer of already constructed roads from the state to a public authority do not generally count.)

  - While the state match can be financed with general obligation debt, the objective should be for toll revenues, not state tax revenues, to become the primary security for debt repayment.

- If a state wishes to accelerate its transportation expenditures it may, in addition to pursuing the strategy described above, also consider use of grant anticipation notes.

  - This strategy involves issuance of debt securities to be repaid from future federal grants. An alternative for exploration is use of the federal annual authorizations under ISTEA as a backstop for state appropriations for lease purchase financing (and issuance of tax exempt certificates of participation).

Application to Current Situation

Application of these ISTEA provisions to the issues currently under consideration by EOTC suggests three potentially useful alternative approaches, which could involve participation by the Turnpike Authority:

(1) The state organizes a new Central Artery Tunnel Authority (CATA) to develop the Central Artery Tunnel (CAT) on a toll financed basis. The state transfers title to its existing project investment to CATA. (The extent to which this will count toward state match requirements remains to be explored.) CATA accepts a federal grant (up to 80%) through the state (or, once it has been set up, through MITTF). The state (or MITTF) issues

bonds to fund its match requirement for the balance of the project, with bond repayment slated to come from CAT toll revenues.

(2) The state (or MITTF) lends Federal funds to CATA in an amount equal to 80% of the cost of CAT; the loan could be subordinated to other CAT construction debt as authorized by ISTEA § 1012. CATA's repayment schedule over 30 years could be tailored to match anticipated toll revenues. Upon receipt of loan repayments, MITTF recycles the repaid toll revenues to other transportation projects (which could be pre-selected and announced as part of a CAT "package" if that would increase political acceptability). To speed the availability of recycled funds for other projects, MITTF might confine its loan to CATA to the construction period, and require CATA to arrange to take out some or all of the loan through long term bonding upon project completion, or upon attainment of a specified revenue bench mark. Some form of MITTF credit support for the bonds might be provided in the long term arrangement.

(3) With appropriate statutory modifications, and defeasance of any outstanding Turnpike Authority bonds whose indenture provisions require all toll revenues to be pledged to Mass Pike debt, the Turnpike Authority might be drawn into scenario (1) or (2) in one of several roles:

- As joint developer of the CAT in conjunction with CATA, with each organization responsible for providing a separate specific portion of the required matching share necessary to obtain ISTEA funds. There could be physical segregation of the portions of the project developed by CATA and by MITTF.

- As direct or standby guarantor of operating toll revenues to support repayment of CATA long term debt.

- As the public authority responsible for CAT development pursuant to a finance plan developed by the state (or by MITTF). After repayment from CAT toll revenues of debt issued to finance the state share, available project revenues would flow to MITTF, for recycling to eligible projects throughout the state rather than solely to Mass Pike.

- In any of the foregoing arrangements, Mass Pike might also enter into contractual arrangements with the state entity responsible for CAT operation for operation, maintenance, ETTM tolling and congestion pricing experiments.

Conclusions

The advantages of utilizing the foregoing techniques are the following:

(1) Use of newly available federal assistance for toll facilities assures that a reliable source of financing will be available for up to 80% of project cost. This assurance of adequate funds for project completion should facilitate financing the balance of project requirements.

(2) Tolls on the CAT should be helpful in alleviating peak hour congestion and air pollution problems. Use of federal funds allows these benefits to be received while reducing required state outlays. The CAT may also qualify for inclusion in the federally subsidized congestion pricing pilot program established by § 1012(b) of ISTEA.

(3) Perpetuation of the Turnpike Authority will be focused on state-wide goals, in a manner which assures optimal use of the Authority's financial capability, toll revenues, and operating experience.

(4) By establishing a revolving fund, MITTF will receive a powerful tool to leverage its support for state facilities, notably those in need of upgrading and repair. To the extent that revolving fund moneys become available, use of these moneys will not be subject to federal strings. Selective privatization of key projects in need of repair could result in additional non-state funds becoming available for infrastructure improvement.

Implications for Strategy and for Drafting of MITTF Legislation

(1) In order to take advantage of the proposals described above, legislation creating MITTF should be drafted to include authority:

(a) To establish a state revolving fund as permitted by ISTEA;

(b) To participate directly in development of projects; to make loans to other public authorities or to private persons to develop projects; and to provide planning oversight for all persons utilizing MITTF funds; and

(c) To serve as lead agency in state congestion pricing and other federally-funded experiments to improve traffic management.

(2) Proposals for continued existence of the Massachusetts Turnpike Authority should require its participation in new projects identified as priorities of the Commonwealth.

(3) Existing budgetary plans should be examined to determine whether optimum use is being made of ISTEA:

(a) In terms of maximizing leverage potential -- attraction of matching funds for desired projects from other public and private sources.

(b) For privatization projects and revenue enhancement opportunities identified in completed privatization studies and by Deloitte & Touche, e.g. Old Colony; Martha's Vineyard Ferry Authority.

(4) MITTF should also be authorized to provide financial inducements utilizing ISTEA funds for other developments, such as assumption by Mass Port of responsibility for "contiguous or integral projects".

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ducted under paragraph (2), together with recommendations."

Transporters of Water Well Drilling Rigs

Section 1023(g) of Pub.L. 102-240 provided that:

"(1) **Study.**—The Secretary shall conduct a study of State and Federal regulations pertaining to transporters of water well drilling rigs on public highways for the purpose of identifying requirements which place a burden on such transporters without enhancing safety or preservation of public highways.

"(2) **Report.**—Not later than 2 years after the date of the enactment of this Act [Dec. 18, 1991], the Secretary shall transmit to Congress a report on the results of the study conducted under paragraph (1), together with any legislative and administrative recommendations of the Secretary."

§ 128. Public hearings

NOTES OF DECISIONS

22. —— Miscellaneous hearings insufficient

Rhode Island transportation officials conducted adequate public hearing on proposed highway alteration project even though plans, specifications, and estimates on projects had been submitted for approval by federal authorities long before that hearing; state officials had not received final approval of plans at time hearing was held, and party challenging validity of hearing did not meet burden of establishing that hearing did not provide forum for meaningful public participation. Fred W. Smith, Inc. v. Burnley, D.R.I.1990, 733 F.Supp. 509.

§ 129. Toll roads, bridges, tunnels, and ferries

(a) Basic program.—

(1) Authorization for federal participation.—Notwithstanding section 301 of this title and subject to the provisions of this section, the Secretary shall permit Federal participation in—

(A) initial construction of a toll highway, bridge, or tunnel (other than a highway, bridge, or tunnel on the Interstate System) or approach thereto;

(B) reconstructing, resurfacing, restoring, and rehabilitating a toll highway, bridge, or tunnel (including a toll highway, bridge, or tunnel subject to an agreement entered into under this section or section 119(e) as in effect on the day before the date of the enactment of the Intermodal Surface Transportation Efficiency Act of 1991) or approach thereto;

(C) reconstruction or replacement of a toll-free bridge or tunnel and conversion of the bridge or tunnel to a toll facility;

(D) reconstruction of a toll-free Federal-aid highway (other than a highway on the Interstate System) and conversion of the highway to a toll facility; and

(E) preliminary studies to determine the feasibility of a toll facility for which Federal participation is authorized under subparagraph (A), (B), (C), or (D);

on the same basis and in the same manner as in the construction of free highways under this chapter.

(2) Ownership.—Each highway, bridge, tunnel, or approach thereto constructed under this subsection must—

(A) be publicly owned, or

(B) be privately owned if the public authority having jurisdiction over the highway, bridge, tunnel, or approach has entered into a contract with a private person or persons to design, finance, construct, and operate the facility and the public authority will be responsible for complying with all applicable requirements of this title with respect to the facility.

(3) Limitations on use of revenues.—Before the Secretary may permit Federal participation under this subsection in construction of a highway, bridge, or tunnel located in a State, the public authority (including the State transportation department) having jurisdiction over the highway, bridge, or tunnel must enter into an agreement with the Secretary which provides that all toll revenues received from operation of the toll facility will be used first for debt service, for reasonable return on investment of any private person financing the project, and for the costs necessary for the proper operation and maintenance of the toll facility, including reconstruction, resurfacing, restoration, and rehabilitation. If the State certifies annually that the tolled facility is being adequately maintained, the State may use any toll revenues in excess of amounts required under

the preceding sentence for any purpose for which Federal funds may be obligated by a State under this title.

(4) **Special rule for funding.**—In the case of a toll highway, bridge, or tunnel under the jurisdiction of a public authority of a State (other than the State transportation department), upon request of the State transportation department and subject to such terms and conditions as such department and public authority may agree, the Secretary shall reimburse such public authority for the Federal share of the costs of construction of the project carried out on the toll facility under this subsection in the same manner and to the same extent as such department would be reimbursed if such project was being carried out by such department. The reimbursement of funds under this paragraph shall be from sums apportioned to the State under this chapter and available for obligations on projects on the Federal-aid system in such State on which the project is being carried out.

(5) **Limitation on federal share.**—Except as otherwise provided in this paragraph, the Federal share payable for construction of a highway, bridge, tunnel, or approach thereto or conversion of a highway, bridge, or tunnel to a toll facility under this subsection shall be such percentage as the State determines but not to exceed 50 percent. The Federal share payable for construction of a new bridge, tunnel, or approach thereto or for reconstruction or replacement of a bridge, tunnel, or approach thereto shall be such percentage as the Secretary determines but not to exceed 80 percent. In the case of a toll facility subject to an agreement under section 119 or 129, the Federal share payable on any project for resurfacing, restoring, rehabilitating, or reconstructing such facility shall be 80 percent until the scheduled expiration of such agreement (as in effect on the day before the date of the enactment of the Intermodal Surface Transportation Efficiency Act of 1991).

(6) **Modifications.**—If a public authority (including a State transportation department) having jurisdiction over a toll highway, bridge, or tunnel subject to an agreement under this section or section 119(e), as in effect on the day before the effective date of title I of the Intermodal Surface Transportation Efficiency Act of 1991, requests modification of such agreement, the Secretary shall modify such agreement to allow the continuation of tolls in accordance with paragraph (3) without repayment of Federal funds.

(7) **Loans.**—A State may loan all or part of the Federal share of a toll project under this section to a public or private agency constructing a toll facility. Such loan may be made only after all Federal environmental requirements have been complied with and permits obtained. The amount loaned shall be subordinated to other debt financing for the facility except for loans made by the State or any other public agency to the agency constructing the facility. Funds loaned pursuant to this section may be obligated for projects eligible under this section. The repayment of any such loan shall commence not more than 5 years after the facility has opened to traffic. Any such loan shall bear interest at the average rate the State's pooled investment fund earned in the 52 weeks preceding the start of repayment. The term of any such loan shall not exceed 30 years from the time the loan was obligated. Amounts repaid to a State from any loan made under this section may be obligated for any purpose for which the loaned funds were available. The Secretary shall establish procedures and guidelines for making such loans.

(8) **Initial construction defined.**—For purposes of this subsection, the term "initial construction" means the construction of a highway, bridge, or tunnel at any time before it is open to traffic and does not include any improvement to a highway, bridge, or tunnel after it is open to traffic.

(b) Notwithstanding the provisions of section 301 of this title, the Secretary may permit Federal participation under this title in the construction of a project constituting an approach to a ferry, whether toll or free, the route of which has been approved under section 103(b) or (c) of this title as a part of one of the Federal-aid systems and has not been designated as a route on the Interstate System. Such ferry may be either publicly or privately owned and operated, but the operating authority and the amount of fares charged for passage shall be under the control of a State agency or official, and all revenues derived from publicly owned or operated ferries shall be applied to payment of the cost of construction or acquisition thereof.

including debt service, and to actual and necessary costs of operation, maintenance, repair, and replacement.

(c) Notwithstanding section 301 of this title, the Secretary may permit Federal participation under this title in the construction of ferry boats and ferry terminal facilities, whether toll or free, subject to the following conditions:

(1) It is not feasible to build a bridge, tunnel, combination thereof, or other normal highway structure in lieu of the use of such ferry.

(2) The operation of the ferry shall be on a route which has been approved under section 103(b) or (c) of this title as a part of one of the Federal-aid systems within the State and has not been designated as a route on the Interstate System.

(3) Such ferry boat or ferry terminal facility shall be publicly owned.

(4) The operating authority and the amount of fares charged for passage on such ferry shall be under the control of the State or other public entity, and all revenues derived therefrom shall be applied to actual and necessary costs of operation, maintenance, and repair, debt service, negotiated management fees and, in the case of a privately operated toll ferry, for a reasonable rate of return.

(5) Such ferry may be operated only within the State (including the islands which comprise the State of Hawaii and the islands which comprise the Commonwealth of Puerto Rico) or between adjoining States. Except with respect to operations between the islands which comprise the State of Hawaii and operations between the islands which comprise the Commonwealth of Puerto Rico and operations between any two points in Alaska and between Alaska and Washington, including stops at appropriate points in the Dominion of Canada, no part of such ferry operation shall be in any foreign or international waters.

(6) No such ferry shall be sold, leased, or otherwise disposed of without the approval of the Secretary. The Federal share of any proceeds from such a disposition shall be credited to the unprogramed balance of Federal-aid highway funds of the same class last apportioned to such State. Any amount so credited shall be in addition to all other funds then apportioned to such State and available for expenditure in accordance with the provisions of this title.

(d) **Pilot program.—**

(1) **Authorization for Federal participation.**—Subject to the provisions of this subsection, the Secretary shall establish a pilot program which permits Federal participation in 9 toll facilities on the same basis and in the same manner as in the construction of free highways under this chapter.

(2) **Limitation on types of facilities.**—The Secretary may only permit Federal participation under this subsection in the following type of facilities:

(A) The construction of a new toll highway, bridge, or tunnel (other than a highway on the Interstate System).

(B) The reconstruction of an existing highway, bridge, or tunnel to expand its capacity (other than a highway, bridge, or tunnel on the Interstate System).

(3) **Limitation on number of facilities.**—The Secretary may only permit Federal participation under this subsection in 9 facilities. One of such facilities shall be carried out in each of the following: Orange County, California, the State of Texas, the States of Pennsylvania and West Virginia, the State of Florida, States [1] of Georgia and West Virginia, and the State of South Carolina. The locations of the other 2 facilities shall be at the discretion of the Secretary; except that not more than 2 facilities carried out under this subsection may be located in a State. The Governor [2] of the States of Pennsylvania and West Virginia shall select the facility to be carried out in such State.[2] The toll facility in Orange County, California, may be located in more than 1 highway corridor to relieve congestion on existing interstate routes in such County.

(4) **Limitation on Federal share.**—Notwithstanding any other provision of law, the Federal share payable for the construction or reconstruction of a toll highway, bridge, or tunnel under this subsection shall not exceed 35 percent.

(5) **Public ownership requirement.**—Each highway, bridge, tunnel, or approach thereto under this subsection must be publicly owned and operated; except that, under this subsection, Federal funds may participate in the ap-

proaches to a toll highway, toll bridge, or toll tunnel whether the highway, bridge, or tunnel is to be or has been constructed by a State or other public authority.

(6) Limitations on use of revenues.—Before the Secretary may permit Federal participation under this subsection in a State, the State highway department (and, in the case of the State of Texas, the Texas Turnpike Authority) must enter into an agreement with the Secretary which provides that all toll revenues received from operation of the tolled facility constructed or reconstructed under this subsection will be used only on the tolled facility, and only for construction or reconstruction costs, or for the costs necessary for the proper operation, maintenance, and debt service of the tolled facility, including resurfacing, reconstruction, rehabilitation, and restoration.

(7) Limitation on Federal participation to original construction.—Except for reconstruction to expand capacity, toll facilities may receive Federal participation under this chapter only once for the original construction or reconstruction of the facility.

(8) Effect on apportionment.—Toll mileage constructed or reconstructed under this subsection shall not be used to increase a State's apportionment under any apportionment formula.

(9) New toll highway defined.—For purposes of this subsection, the term "new toll highway, bridge, or tunnel" shall mean initial construction of a highway, bridge, or tunnel on a new location at any time before it is open to traffic and shall not include any improvements to a toll highway, bridge, or tunnel after it is open to traffic.

(10) Special rule for funding of Texas project.—Upon request of the Texas Department of Highways and Public Transportation and subject to such terms and conditions as such Department and the Texas Turnpike Authority may agree, the Secretary shall reimburse the Texas Turnpike Authority for the Federal share of the costs of construction of the project carried out in the State of Texas under this subsection in the same manner and to the same extent as such Department would be reimbursed if such project was being carried out by such Department. The reimbursement of funds under this paragraph shall be from sums apportioned to the State of Texas under this chapter and available for obligation on projects on the Federal-aid primary system in such State.

[**(e) Repealed.** Pub.L. 102-240, Title I, § 1012(c)(1), Dec. 18, 1991, 105 Stat. 1938]

[**(f) Redesignated (b).** Pub.L. 102-240, Title I, § 1012(c)(2), Dec. 18, 1991, 105 Stat. 1939]

[**(g) Redesignated (c).** Pub.L. 102-240, Title I, § 1012(c)(2), Dec. 18, 1991, 105 Stat. 1939]

[**(h), (i) Repealed.** Pub.L. 102-240, Title I, § 1012(c)(1), Dec. 18, 1991, 105 Stat. 1938]

[**(j) Redesignated (d).** Pub.L. 102-240, Title I, § 1012(c)(2), Dec. 18, 1991, 105 Stat. 1939]

[**(k) Repealed.** Pub.L. 102-240, Title I, § 1012(c)(1), Dec. 18, 1991, 105 Stat. 1938]

(As amended Pub.L. 102-240, Title I, § 1012(a), (c), Dec. 18, 1991, 105 Stat. 1936, 1938.)

[1] So in original. Probably should be "the States".

[2] So in original. Probably should be plural. See Codifications note set out under this section.

HISTORICAL AND STATUTORY NOTES

Revision Notes and Legislative Reports

1991 Act. House Report No. 102-171 (I & II) and House Conference Report No. 102-404, see 1991 U.S. Code Cong. and Adm. News, p. ___

References in Text

The date of the enactment of the Intermodal Surface Transportation Efficiency Act of 1991, referred to in subsec. (a)(1)(B) and (5), is the date of the enactment of Pub.L. 102-240, which was approved Dec. 18, 1991.

The effective date of title I of the Intermodal Surface Transportation Efficiency Act of 1991, Title I of Pub.L. 102-240, Dec. 5, 1990, 105 Stat 1914, referred to in subsec. (a)(6), is Dec. 18, 1991, except as otherwise provided, see section 1100(a) and (b) of Pub.L. 102-240, set out as a note under section 104 of this title.

Construction of Ferry Boats and Ferry Terminal Facilities

Section 1064 of Pub.L. 102-240 provided that

"(a) **In general.**—The Secretary shall carry out a program for construction of ferry boats and ferry terminal facilities in accordance with section 129(c) of title 23, United States Code [subsec. (c) of this section].

"(b) **Federal share.**—The Federal share payable for construction of ferry boats and ferry terminal facilities under this section shall be 80 percent of the cost thereof.

"(c) **Funding.**—There shall be available, out of the Highway Trust Fund (other than the Mass Transit Account), to the Secretary for obligation at the discretion of the Secretary $14,000,000 for fiscal year 1992, $17,000,000 per fiscal year for each of fiscal years 1993, 1994, 1995, and 1996, and $18,000,000 for fiscal year 1997 in carrying out this section. Such sums shall remain available until expended.

"(d) **Applicability of Title 23.**—All provisions of chapter 1 of title 23, United States Code [this chapter], that are applicable to the National Highway System, other than provisions relating to apportionment formula and Federal share, shall apply to funds made available to carry out this section, except as determined by the Secretary to be inconsistent with this section.

"(e) **Treatment of certain roads.**—For purposes of this section, North Carolina State Routes 12, 45, 306, 615, and 168 and United States Route 421 in the State of North Carolina shall be treated as principal arterials."

Continuation of Existing Agreements

Section 1012(d) of Pub.L. 102–240 provided that: "Unless modified under section 129(a)(6) of such title, as amended by subsection (a) of this section [subsec. (a)(6) of this section], agreements entered into under section 119(e) or 129 of such title [section 119(e) of this title or this section] before the effective date of this title [Dec. 18, 1991, except as otherwise provided, see section 1101(a) and (b) of Pub.L. 102–242, set out as a note under section 104 of this title] and in effect on the day before such effective date shall continue in effect on and after such effective date in accordance with the provisions of such agreement and such section 119(e) or 129 [section 119(e) of this title or this section]."

NOTES OF DECISIONS

1. Costs of construction

Clallam County v. Department of Transp., of State of Wash., 849 F.2d 424 [main volume] certiorari denied 109 S.Ct. 790, 488 U.S. 1008, 102 L.Ed.2d 782.

§ 130. Railway-highway crossings

HISTORICAL AND STATUTORY NOTES

Demonstration Project, Railroad-Highway Crossings; Reports to President and Congress; Appropriations Authorization; Highway Safety Study; Report to Congress

Pub.L. 93–87, Title I, § 163, Aug. 13, 1973, 87 Stat. 280, as amended by Pub.L. 93–643, § 104, Jan. 4, 1975, 88 Stat. 2282; Pub.L. 94–280, Title I, § 140(a)–(e), May 5, 1976, 90 Stat. 444; Pub.L. 95–599, Title I, § 134(a)–(c), Nov. 6, 1978, 92 Stat. 2709; Pub.L. 96–470, Title II, § 209(b), Oct. 19, 1980, 94 Stat. 2245; Pub.L. 97–424, Title I, § 151, Jan. 6, 1983, 96 Stat. 2132; Pub.L. 100–17, Title I, §§ 133(c)(3), 148, Apr. 2, 1987, 101 Stat. 172, 181; Pub.L. 100–202, § 101(*l*) [Title III, § 346], Dec. 22, 1987, 101 Stat. 1329–358, 1329–388; Pub.L. 102–240, Title I, § 1037, Dec. 18, 1991, 105 Stat. 1987, provided that:

[See main volume for (a) to (o)]

"(p) There is authorized to be appropriated to carry out this section (other than subsection (*l*)) not to exceed $15,000,000 for the fiscal year ending June 30, 1974, $25,000,000 for the fiscal year ending June 30, 1975, and $50,000,000 for the fiscal year ending June 30, 1976, $6,250,000, for the period beginning July 1, 1976, and ending September 30, 1976, $26,400,000 for the fiscal year ending September 30, 1977, $51,400,000 for the fiscal year ending September 30, 1978, $70,000,000 for the fiscal year ending September 30, 1979, and $90,000,000 for the fiscal year ending September 30, 1980, $100,000,000 for the fiscal year ending September 30, 1981, and $100,000,000 for the fiscal year ending September 30, 1982, and $50,000,000 for the fiscal year ending September 30, 1983, and $50,000,000 for the fiscal year ending September 30, 1984, and $50,000,000 for the fiscal year ending September 30, 1985, and $50,000,000 for the fiscal year ending September 30, 1986, and $15,000,000 per fiscal year for each of the fiscal years 1987, 1988, 1989, 1990, 1991, 1992, 1993, and 1994, except that not more than two-thirds of all funds authorized and expended under authority of this section in any fiscal year shall be appropriated out of the Highway Trust Fund. Notwithstanding any other provision of this section, any project which is not under construction, according to the Secretary of Transportation, by September 30, 1985, shall not be eligible for additional funds under this authorization.

[See main volume for (q)]

Vehicle Proximity Alert System

Pub.L. 102–240, Title I, § 1072, Dec. 18, 1991, 105 Stat. 2012, provided that: "The Secretary shall coordinate the field testing of the vehicle proximity alert system and comparable systems to determine their feasibility for use by priority vehicles as an effective railroad-highway grade crossing safety device. In the event the vehicle proximity alert or a comparable system proves to be technologically and economically feasible, the Secretary shall develop and implement appropriate programs under section 130 of title 23, United States Code [this section], to provide for installation of such devices where appropriate."

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